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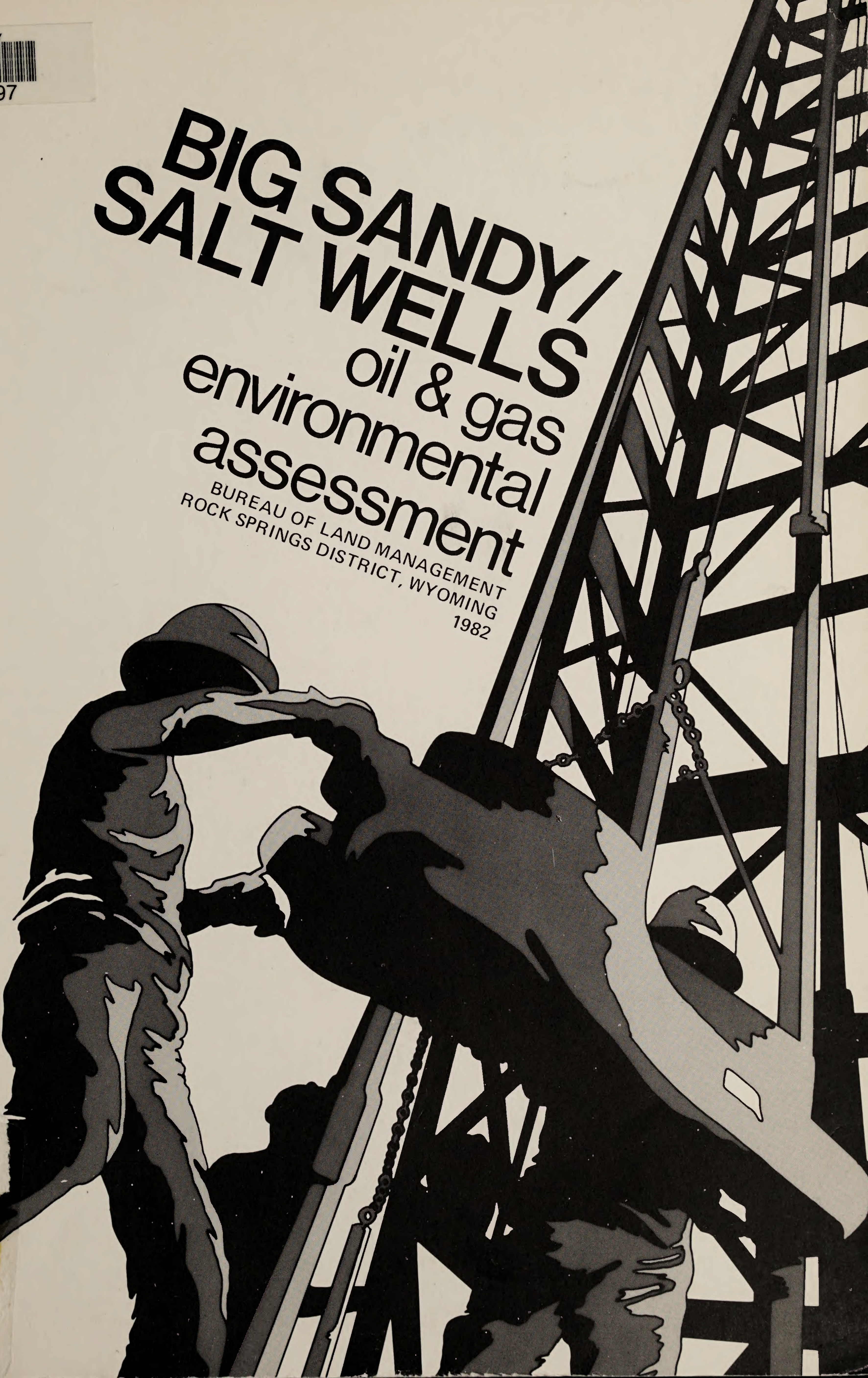
ROCK SPRINGS DISTRICT, WYOMING
1982



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June 25, 1982

Dear Reader:

Enclosed is Volume 2 of the final regional environmental assessment on oil and gas development in the Big Sandy and Salt Wells resource areas. Volume 1 was distributed in December 1981 as the draft environmental assessment. The comments received on that volume did not require major changes in the data, analysis, or conclusions; consequently, it has not been reprinted. A limited number of copies of Volume 1 are available upon request from the Oil and Gas EA Team Leader, Bureau of Land Management, Rock Springs District.

Enclosed with this final EA is a copy of BLM's decision record. This decision record documents BLM's decision to select the proposed action. Since preparation of the draft environmental assessment, the U.S. Geological Survey (GS) has been reorganized. Those responsibilities formerly held by the Conservation Division, GS, are now assigned to the Minerals Management Service (MMS). The mitigation measures in the decision record have been modified to reflect this reorganization.

Your interest and participation in the management of public land is appreciated.

Sincerely yours,

District Manager

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WY-049-EA81-1

DECISION RECORD

OIL AND GAS DEVELOPMENT

BIG SANDY/SALT WELLS RESOURCE AREAS

I. Alternatives Considered

The following is a brief description of the alternatives analyzed. For more detailed information, refer to the draft EA (Volume 1), Chapter I.

A. Proposed Action

BLM has established through the land use planning process, criteria for environmental protection during oil and gas development. The criteria and the rationale for their use are described in the Management Framework Plan (MFP) for the resource areas involved. BLM's proposed action is to continue issuing leases, subject to the limitations imposed by the MFP as well as by law. Table 2 in the final EA (Volume 2) lists those MFP decisions which would affect oil and gas development in the assessment area. Table 3, also updated in the final EA, lists the Bureau approved Areas of Critical Environmental Concern (ACECs) which provide special protection to critical areas within the assessment area. Special management of these areas is also part of the proposed action.

B. Alternative 1--Increase Restrictions

Alternative 1 proposes to increase restrictions on leasing and thereby decrease the area available for leasing. These restrictions would be added to those of the proposed action. Application of these additional criteria would result in 7 percent of the area being closed to leasing, 1 percent of the area open to leasing but no surface occupancy allowed, and 92 percent remaining open with standard or special stipulations. Adoption of these additional restrictions would require amendment of the MFP.

C. Alternative 2--Continuation of Present Management (No Action)

This alternative would make no changes in present practices, procedures, or stipulations. No additional coordination or standardization would be undertaken between the resource areas. No Areas of Critical Environmental Concern would be established that would not be compatible with oil and gas development. The entire area would be open to leasing with standard stipulations. Only those special stipulations presently employed would be applied.

II. Alternatives Not Selected and Rationale

A. Alternative 1--Increase Restrictions was not selected because the environmental analysis indicated that resources could be adequately protected without additional restrictions on oil and gas development.

B. Alternative 2--Continuation of Present Management (No Action) was not selected because it would have resulted in undesirable impacts that could be mitigated without adversely impacting oil and gas development.

III. Decision and Rationale

The decision is to accept the proposed action as discussed in the environmental assessment. Modifications to the land use decisions have been completed with the exception of the land use decisions affecting the Adobe Town Wilderness Study Area (WSA). (These land use decisions will be developed jointly with the BLM Rawlins District by the end of Fiscal Year 1982. An environmental analysis on the Adobe Town WSA will be completed by the Rawlins District in Fiscal Year 1983. The final disposition of this WSA will determine the conditions and stipulations on new oil and gas activity in Adobe Town.) The modified land use decisions are briefly described in the final EA (Volume 2) under "Proposed Action." They are also listed in Table 2. The land use decisions reflect the Bureau's present oil and gas leasing program. The safeguards contained in the MFP decisions are designed to ensure that the environmental consequences of oil and gas activities are minimal.

IV. District-wide Rehabilitation Plan

Part of the proposed action included utilization of a site-specific rehabilitation plan such as the one outlined in Appendix E (Volume 1). Appendix E will require further work prior to being accepted. Therefore, to carry out this aspect of the proposed action, a multi-disciplinary team of resource specialists will be established to develop a district rehabilitation program beginning in Fiscal Year 1983.

V. Mitigation Measures Accepted

Implementation of the proposed action would include the modification of some existing mitigation measures at the lease level, adoption of additional mitigation measures at the lease level (Category 1, see Volume 1, Chapter III); adoption of site-specific measures (stipulations) on an ongoing basis (Category 2); and continued application of standard stipulations and standard construction practices as outlined in Surface Operating Standards for Oil and Gas Exploration and Development.

Category 1 mitigation measures involve restrictions on the timing or manner of use allowed over a relatively large area. This type of measure will be developed in some instances as part of an activity plan. Activity plans will be developed for the seven ACECs and mitigation for oil and gas development will be addressed in the activity plan. New leases or renewed leases in ACECs will contain these mitigation measures.

A. The following Category 1 mitigation measures have been modified and are now accepted:

1. Modify mitigation measure number 4, Appendix C.

From: No occupancy or other surface disturbance will be allowed within_______(660 feet for live-water streams; 1,320 from major recreational waters, i.e., Flaming Gorge, Fontenelle Reservoir, Big Sandy and Eden Reservoirs, Jim Bridger Surge Pond; 1/4 mile either side of original trail remnants, or within the visible horizon, whichever is least) feet of the (road, trail, river, creek, canal, etc.). This distance may be modified when specifically approved in writing by the District Engineer, Geological Survey, with the concurrence of the District Manager, Bureau of Land Management.

To: No occupancy or other surface disturbance will be allowed within_______(660 feet for live-water streams; 1,320 from major recreational waters, i.e., Fontenelle Reservoir, Big Sandy and Eden Reservoirs, Jim Bridger Surge Pond; 1/2 mile from Flaming Gorge Reservoir (on BLM administered lands); 1/4 mile either side of original historic trail remnants, or within the visible horizon, whichever is least) feet of the (road, trail, river, creek, canal, etc.). This distance may be modified when specifically approved in writing by the District Supervisor, Minerals Management Service, with the concurrence of the Authorized Officer, BLM.

2. Modify mitigation measure number 32, Appendix D.

From: Drilling or construction will not be conducted in lambing or calving pastures from _______ to _______(dates) unless authorized by the livestock operator.

To: Drilling or construction will not be conducted in lambing or calving pastures from _______ to _______ (dates) unless approved by the Authorized Officer, BLM.

B. The following Category 1 mitigation measures were recommended in the draft EA (Volume 1, Appendix D) and have been accepted. They will be attached to new or renewed leases where appropriate.

1. This stipulation will be applied to oil and gas leases issued on lands wholly or partly covered by a preference right lease application or a federal coal lease for which an approved mining and reclamation plan does not exist. "This lease is subject to (coal lease or PRLA number). Stipulations addressed to simultaneous operations will be attached at the time of approval of the APD. Plans for oil field development and proposed secondary recovery will be made in cooperation with MMS and the lease holder."

2. Special Stipulation No. 7 (see Appendix C) will be modified to include elk calving areas as follows: "In order to protect known elk calving areas; exploration, drilling, and other development activity will be allowed only during the period from June 30 to May 10." This limitation does not apply to maintenance and operation of producing wells.

C. The following Category 2 mitigation measures have been modified and are now accepted:

1. Modify mitigation measure number 3, Appendix D.

From: To avoid a trespass situation resulting from unauthorized removal of materials for road surfacing, any APDs which do not specify a materials source should have an information statement added which states "A sales contract for scoria and/or sand and gravel is required prior to the removal of these materials from an area of federally owned minerals."

To: To avoid a trespass situation resulting from unauthorized removal of materials for road surfacing, any APDs which do not specify a materials source should have an information statement added which states "A sales contract for scoria and/or sand and gravel is required prior to the removal of those materials from an area of federally owned surface."

2. Modify mitigation measure number 14, Appendix D.

From: Right-of-way clearing prior to beginning construction shall be limited to 30 feet on the extreme right or left of the right-of-way. The portion of the right-of-way utilized for movement of equipment shall wherever possible, be just scalped of vegetation. Brush beaters will be used whenever possible. If it is necessary to remove soil during right-of-way clearing, graders shall be used so the depth of cut can be better controlled.

The depth of the soil removed will be kept to a minimum. Ripping may be required prior to seeding. Vegetation stripped from an area will be windrowed along the right-of-way, and then put back on the disturbed area after the right-of-way is reseeded.

To: Right-of-way clearing prior to beginning construction shall be limited to 30 feet on the extreme right or left of the right-of-way. (In steep terrain, the disturbed area may be wider than 30 feet.) The portion of the right-of-way utilized for movement of equipment shall, wherever possible, be just scalped of vegetation. Brush beaters will be used whenever possible. If it is necessary to remove soil during right-of-way clearing, graders shall be used so the depth of cut can be better controlled.

The depth of the soil removed will be kept to a minimum. Ripping may be required prior to seeding. Vegetation stripped from an area will be windrowed along the right-of-way, and then put back on the disturbed area after the right-of-way is reseeded.

D. The following Category 2 mitigation measures were recommended in the draft EA (Volume 1, Appendix D) and have been accepted. They will be attached to rights-of-way, APDs, etc., where appropriate. These mitigation measures may be modified as appropriate for a specific project and additional measures may be developed as necessary.

1. The operator will use dust abatement measures on all access roads passing within ________ feet of any subdivision or ranch dwelling if traffic from the exploration and development activities produces enough dust to be visible from the dwelling. Dust from any drilling pad within ________ feet of a residence will be controlled by watering. Topsoil stockpiles will be covered with mulch, netting, or canvas to reduce dust and soil loss. (The city, county, or private landowner should be contacted for their recommendations prior to authorizing the well, right-of-way, etc.)

2. During reclamation of the site, the operator will push fill material back into the cuts and up over the backslope to approximate the original topography. No depressions will be left that will trap excessive amounts of water or form persistent ponds. (This measure should be attached to all APDs requiring a cut of more than three feet to level the platform.)

3. The operator will reshape abandoned access roads by pushing the fill material back into the cuts.

4. To the extent possible, roads should follow natural contours. Where steep slopes would require extensive cuts and fills, roads should follow ridgelines.

5. The operator will not push soil material and overburden over sideslopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved.

6. If there is snow on the ground when construction begins, the operator will remove it before the soil is disturbed, and pile it downhill from the location of the topsoil stockpile.

7. The operator will place the reserve pit for any drilling location constructed on a slope of 25% or more on the side of the location next to the backslope (only when not in conflict with hydrogen sulfide safety requirements) or place 50% of the pit in the cut. Topsoil will be stockpiled on either end of the location. This measure would eliminate any chance of reserve pit failure and facilitate easier rehabilitation.

8. The reserve pit will be oriented to prevent collection of surface runoff. If possible, the operator will construct a trench on the uphill side of the reserve pit before the drilling rig is installed. If this is infeasible, trench construction must occur immediately after removal of the drilling rig. The trench will serve to divert surface drainage around the reserve pit and will be left intact until the pit is closed.

9. Surface disturbance must be preceded by an approved reclamation plan. BLM will not release performance bonds for 10 years unless good vegetative cover has sustained itself for two years.

Evaluation will be made after the third and fifth growing season. In the case of initial seeding failure, reseeding will be required until an acceptable vegetation cover is achieved.

10. To hasten reestablishment of vegetation and reduce the time soils are exposed to wind and water, the following measure will be adopted: "All dry holes, abandoned wells, and unused portions of well locations within precipitation zones of 14 inches or less shall be fenced until an acceptable vegetation cover is achieved, as determined by the Authorized Officer, BLM.

11. The operator may not remove or damage trees without specific approval from the Authorized Officer, BLM. All merchantable timber shall be purchased by the operator at the total appraised price that is determined by BLM.

12. The operator will cover and enclose the burn pit with small mesh wire, to prevent trash from being blown offsite, and to prevent wildfires. Proper precaution will be taken at all times to prevent and suppress fires. The grantee will be held responsible for suppression costs for any fires on public lands caused through negligence of his employees, contractors, or subcontractors. No debris burning will be allowed without specific permission from the Authorized Officer, BLM.

13. After the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling platform on the contour, to a depth of at least 12 inches. The ripper teeth are to be no farther than 24 inches apart.

14. The operator will distribute the topsoil evenly over the entire location and prepare the seedbed by disking on the contour to a depth of 4 to 6 inches. Prompt redistribution of topsoil (preferably within 9 months of removal) is helpful for revegetation of disturbed areas.

15. The operator shall not use pipeline routes for roads without approval of the Authorized Officer, BLM.

16. Reserve pits constructed in porous material close to perennial streams or public drinking water sources will be lined with plastic or bentonite clay before they are used.

17. The operator will avoid constructing new roads in or through drainage bottoms, whenever possible. Temporary low water crossings will be used for crossing drainages when feasible. (If the road is to be retained, installation of a culvert may be required.) The feasibility of proposed flowing stream crossings will be analyzed by the Division of Operations, BLM. Engineering designs will be submitted by the operator with the APD.

18. No seismic activity will be permitted within two aerial miles of big game concentrations during critical stress periods, which will be determined on a site-specific basis by the Authorized Officer, BLM.

19. No occupancy or other surface disturbance will be allowed within a 1,320-foot radius of the center of a sage grouse strutting ground (lek). No exceptions to this will be granted. In order to protect the nesting area around the strutting ground, exploration, drilling, and other development activity will be allowed within a 1 3/4-mile distance from the 1/4-mile lek protection zone only during the period June 15 to March 1. Exceptions to the monthly limitations in any year may be specifically authorized in writing by the District Supervisor, Minerals Management Service, with the concurrence of the Authorized Officer, BLM.

20. All prairie dog towns that will be affected by construction activities must be surveyed for black-footed ferrets prior to disturbance. If ferrets are located during these surveys, or at any time during the construction or life of the project, formal consultation with the Fish and Wildlife Service will be initiated immediately.

21. The operator will place flagging around all reserve pits to discourage waterfowl from landing on them.

22. BLM reserves the right to require modification or additions to structures placed on the right-of-way if found to be necessary to ensure the safety of wildlife, including raptors. Such modifications will be made without liability or expense to the United States.

23. If production water meets DEQ requirements and is permitted for surface discharge, and BLM determines that it would be of beneficial use for livestock, and if MMS concurs, the water will

be transported via pipe or open ditch (concrete or rock-lined) to the place it is impounded, enters live water, or enters a drainage. If the water is discharged into a drainage, conditions of slope, soil, and rate of flow must be such to prevent erosion.

24. Range improvements, such as fencing or reservoirs, will not be disturbed by the operator; or where disturbance is necessary, they will be left in the original or better condition as determined by the Authorized Officer, BLM.

25. Because of the discovery of significant cultural resources the project location should be changed as described below and as indicated on the attached map:______________________________

26. Because of a high probability of locating buried cultural deposits during construction; the operator will provide an archeologist, approved by the BLM, to monitor disturbing activities at the following location:____________________________________

Construction methods will be used which allow the archeologist to identify buried cultural resources without endangering the personnel monitoring the disturbance. If any potentially significant buried resources are identified, and the archeologist determines that further operations will seriously affect the cultural resource, work will be suspended as required in standard stipulation ______(number), and BLM will evaluate the resource and develop additional stipulations as needed. The cost of avoidance or salvage of any cultural resource identified by the archeologist will be that of the operator. A report of all activities of the archeologist will be submitted to BLM within 30 days following completion of the monitoring.

27. In order to provide additional data on National Register eligibility, a detailed evaluation must be made of the following sites:______. The evaluation will be made by an approved archeologist or historian at the operator's expense. Techniques for such evaluation include but are not limited to, detailed mapping, inventory or collection of surface material, and test excavation at prehistoric sites. At historic sites, appropriate measures may also include photo-recording, archival research, and interviews. If subsurface testing is necessary, it will be the minimum amount necessary to determine the subsurface significance of the site. Any C^{14} and thermoluminescent samples collected will be submitted for analysis at an accepted laboratory. Any pollen or flotation samples collected will be analyzed in an

acceptable manner. A written report on the results of the investigations will be submitted to BLM within 30 days following completion of field work.

28. To the extent possible, roads should follow natural contours. Where steep slopes would require extensive cuts and fills, roads should follow ridgelines.

29. Powerlines and pipelines will be placed in utility corridors or alongside roads where possible.

E. The following Category 2 mitigation measure has been added and accepted.

1. If the oil or gas well becomes a producer, the access road from ______________ to the well site will be surfaced/modified as specified by the Authorized Officer, BLM.

VI. Mitigation Measures Rejected and Rationale

A. Those mitigation measures described in Volume 1 (Appendix D, numbers 7 and 12) which require adherence with Appendix E, Site-specific Rehabilitation Plan, are rejected. When the district-wide rehabilitation plan is completed, appropriate mitigation measures will be developed.

B. Those mitigation measures described in Volume 1 (Appendix D, numbers 29 and 38) which require muffling of engines to minimize noise disturbance are rejected. The Occupational Safety and Health Administration (OSHA) and the Minerals Management Service (MMS) have recently implemented new regulations controlling noise. Noise control measures will be mandatory.

VII. Supplemental Analysis

The environmental analysis was programmatic in nature. The primary purpose was to identify overall and cumulative impacts of an assumed rate and type of development. As individual applications for specific projects are received, they will be reviewed to determine the applicability of the analysis to the project. If the individual project is determined to be outside the scope of the analysis or controversial, appropriate supplemental analysis will be conducted. If a project is within the scope of the analysis, it will be documented and no further analysis will be conducted.

VIII. Conclusion

Based on the analysis of the EA (WY-049-EA81-1), we conclude that this decision and the resulting actions, as mitigated, will result in no significant impacts to the environment, and therefore conclude that no Environmental Impact Statement is necessary.

Clinton E Hansen
Area Manager, Big Sandy

5/21/82
Date

Robert W. Bierer
Area Manager, Salt Wells

5/24/82
Date

District Manager, Rock Springs

5/24/82
Date

Concur:

Maxwell T. Lieurance
State Director, Wyoming

5/25/82
Date

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FINAL ENVIRONMENTAL ASSESSMENT
OF
OIL AND GAS DEVELOPMENT
IN
BIG SANDY/SALT WELLS RESOURCE AREAS
ROCK SPRINGS DISTRICT, WYOMING

WY-049-EA81-1

Located in the Counties of Sweetwater, Fremont,
Sublette, Lincoln, and Uinta.

JUNE 1982

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VOLUME 2 SYNOPSIS

INTRODUCTION

The Final Environmental Assessment (EA) on oil and gas development in the Big Sandy and Salt Wells resource areas consists of two volumes. Volume 1 was printed and distributed in December 1981 as the Draft Big Sandy/Salt Wells Oil and Gas Environmental Assessment, Rock Springs District, Wyoming. Comments received on that volume did not require major changes in the data, analysis, or conclusions. Thus Volume 1 has not been reprinted. Persons who received Volume 1 were encouraged to retain that volume (Introductory Letter). A limited number of copies of Volume 1 are available upon request from the Oil and Gas EA Team Leader, Bureau of Land Management, P.O. Box 1869, Rock Springs, Wyoming.

Volume 2 is titled the Final Big Sandy/Salt Wells Oil and Gas Environmental Assessment, Rock Springs District, Wyoming. This volume contains revisions of Volume 1 in response to public comments and BLM's land use planning. Volume 2 also contains Map II-3, Management Considerations, Vegetation and Reclamation, which was not available when Volume 1 was released (see inside back cover). A summary of Volume 1 is included in this volume; however, Chapters I through III and the appended material of Volume 1 are incorporated into the final EA by reference.

OIL AND GAS DEVELOPMENT AND PRODUCTION

Commercial production of hydrocarbons first began in the assessment area in the 1920's. However, oil and gas activities were minimal until the late 1950's and early 1960's when new technology and demand resulted in a period of increased drilling activity. Between 1964 and 1974, drilling activity continued at a relatively moderate and fairly consistent level. In 1975 a steady increase in drilling activity began. Rapid improvements in drilling technology and hydrocarbon price increases have contributed to an increase in the number of wells drilled. Sweetwater County was second in the state in the number of drilling permits issued in 1979, with 226.

Recently, drilling activity has slowed down; BLM has received 25 percent fewer applications for permit to drill during Fiscal Year 1982 as compared to Fiscal Year 1981. This situation is believed to be only temporary and reflective of current economic conditions.

The assessment area comprises a major portion of the Green River Basin which is a significant source of hydrocarbons in Wyoming and nationally. In 1978 Barlow and Haun estimated that the Green River Basin had produced 40.6 percent of the gas and 9.4 percent of the oil to date in Wyoming, and that it contained 60.4 percent of the remaining gas reserves and 33.2 percent of the remaining oil reserves in the state. Tables I-3 through I-6 in Volume 1 list the producing fields and operating facilities within the assessment area.

SUMMARY

This section briefly discusses information found in the draft environmental assessment on oil and gas development in the Big Sandy and Salt Wells resource areas, Rock Springs District, which constitutes Volume 1 of this environmental assessment. The reader is referred to that volume for details; however, certain key tables have been updated and are repeated in this volume.

Area of Analysis

This environmental assessment covers the Big Sandy and Salt Wells resource areas of the Rock Springs District (see General Location Map, Volume 1). This EA also addresses that portion of the Adobe Town Wilderness Study Area in the Rawlins District (Appendix F, Volume 1). The area consists of over five million acres in Sweetwater, Fremont, Sublette, Lincoln, and Uinta counties. The federal government is the major landholder within the assessment area; however, there are substantial amounts of state and privately owned lands. Table 1 (Table I-1 in Volume 1) and Table I-2 (Volume 1) show the surface and mineral ownership in the assessment area. All of the federal mineral estate is subject to leasing unless specifically excluded.

Proposed Action

BLM has established, through the land use planning process, criteria for environmental protection in the assessment area. The criteria and the rationale for their use are described in the Management

Table 1

SURFACE OWNERSHIP IN THE ASSESSMENT AREA

Surface Estate	Acres	Percent Of Total
BLM[1/]	3,628,379	68
U.S. Fish and Wildlife Service	16,886	[2/]
U.S. Forest Service	58,923	1
Flaming Gorge National Recreation Area	96,277	1.8
Other Federal	141,481	2.7
State of Wyoming	184,267	3
Private	1,201,192	23.5
Total	5,327,405	100.0

[1/] Includes that portion of the Adobe Town Wilderness Study Area in the Rawlins District.

[2/] Less than 1%

Framework Plan (MFP) for the resource areas involved. Table 2 (Table I-8 in Volume 1) is an updated listing of those MFP decisions which would affect oil and gas leasing in the assessment area. Since the preparation of the draft EA, public comments on the proposed planning decisions as well as the analysis in the draft EA, have led to the final land use decisions affecting the oil and gas program.

Also, some aspects of the planning system have been updated since preparation of the draft EA. Visual Resource Management classification has been completed and management decisions would be based on the updated information.

Table 3 (Table I-9 in Volume 1) lists the Bureau approved Areas of Critical Environmental Concern (ACECs) which provide special protection to critical areas within the assessment area. Special management of these areas is also part of the proposed action. Activity plans will be developed for management of these special areas.

BLM's proposed action is to continue issuing leases, subject to the limitations proposed by the MFP as well as by law. Under the proposed action, leasing would not be allowed on 5,280 acres; 100,462 acres would be leased with no surface occupancy allowed. The remaining area (98 percent) would be open to oil and gas leasing and subsequent development. Standard stipulations would be applied to the open area, and, in environmentally sensitive situations (e.g., elk calving grounds), special stipulations would be applied.

Alternatives

Two alternatives to the proposed action have been analyzed. Alternative 1 proposes to increase restrictions on leasing and thereby decrease the area available for leasing. These restrictions would be added to those of the proposed action. Application of these additional criteria would result in 7 percent of the area being closed to leasing; 1 percent of the area open to leasing, but no surface occupancy allowed; and 92 percent remaining open with standard or special stipulations. Adoption of these additional restrictions would require amendment of the MFP. Alternative 2 would make no changes in present practices, procedures, or stipulations. No ACECs would be established that would not be compatible with oil and gas development. The entire area would be open to leasing with standard stipulations. Only those special stipulations presently employed would be applied.

Impacts

The projected level of oil and gas development activity is listed on Table II-1, Volume 1. These projections were used to determine the impacts of the proposed action and alternatives.

Oil and gas development could conflict with existing land uses such as livestock grazing, recreation, or wild horse and wildlife habitat and with the extraction of other minerals such as coal. Surface disturbance caused by oil and gas development would result in disturbance of soils and vegetation; loss of wildlife habitat and forage; reduction of forage available for livestock grazing; increases in fugitive dust, and emissions of air pollutants; as well as potential impacts to cultural, visual, and recreation resources. Some alteration of topography would occur in the construction of roads and drill pads. Human disturbance could displace wildlife and wild horses, and incidences of harassment to wildlife and livestock could increase. Water resources could also be adversely affected by contaminants or increased sediment loads.

Beneficial impacts resulting from increases in oil and gas development would be more jobs and increased tax revenues to the State of Wyoming and county government. New water sources may become available for livestock and wildlife if water wells drilled to supply oil or gas well drilling, produce water of sufficient quality and quantity.

PUBLIC REVIEW OF DRAFT

The draft environmental assessment was sent to federal, state, and local government agencies; industrial interests; and various organizations and individuals with known interest in the area. They were asked to review and comment on the draft. The Bureau's Rock Springs District office also issued a news release on December 21, 1981 to local and regional news media, announcing a 30-day public review and explained where copies of the draft EA could be obtained.

The news release was reissued January 15, 1982, and the comment period was extended to February 3, 1982. However, all comments received through February 28, 1982 were considered equally in the preparation of the final environmental assessment. Written communications were received from nine agencies. BLM also conducted internal reviews of the draft EA.

Table 2

RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS

Number and Resource Area	Proposed Decision	Acreage Affected	Effect if Implemented	Status
	Specific Land Use Recommendations			
L-2.1 Salt Wells	Issue oil and gas leases on the public lands within one mile of Point of Rocks and the city limits of Rock Springs and Green River with the stipulation that no surface occupancy will be allowed within the one mile radius. Depend on Sweetwater County to protect private lands within the one-mile buffer from oil and gas development through zoning or other means.	5,760	-Some hydrocarbons in the buffer zone may not be accessible by directional drilling. +Increased public safety.	Increased Restriction
L-2.1 Big Sandy	Administratively close to oil and gas leasing all federal lands within the Rock Springs proposed expansion area (Tps. 19-20 N., R. 105 W.).	4,000	+Potential hindrance to urban expansion will be avoided in expansion area.	Increased Restriction
	Stipulate no surface occupancy on oil and gas leases issued within one mile of the boundary of other concentrated population areas within the planning unit. This action is being taken to protect the population from the accidental release of hydrogen sulfide (sour) gas.	19,200	-Some hydrocarbons may be inaccessible in the buffer zone.	
L-5.1 Salt Wells	Accept applications for communication sites on Aspen Mountain only if applicants agree to share use of existing facilities. Reserve the remaining tract of federal land for present and future needs of the Bureau of Land Management and other federal, state, county, and city governmental agencies.	--	-Alternate sites will be required. +Impacts on Aspen Mountain will be limited to present situation.	Increased Restriction
L-4.2 Big Sandy	Protect the scenic values along Highway 28 within Fremont County. All proposed lands actions within view of the highway will be evaluated for impacts and those impacts mitigated to protect the scenic value of this historical area.	--	-Permanent facilities in this area will have to be specially designed. +Visual resource enhanced.	Increased Restriction
W-1.1 Big Sandy	In areas with a vegetal soil factor of 3, require all applications for land use to be accompanied by a detailed soil conservation plan.	798,090[1/]	-Delay and complicate approval of projects. +Prevent or reduce adverse impacts.	Increased Restriction
W-3.9 Big Sandy	Water quality plans will be required prior to construction of drill site mud pits to be sited within a 100-year floodplain or within 1/8 mile of an ephemeral or perennial stream.	--	+Increase reclamation success. +Protect water quality. -Increase approval time.	Increased Restriction
W-3.6 Salt Wells	Include mitigating measures with APDs requiring construction of mudpits within the 100-year floodplain or within 1/8 mile of ephemeral and perennial streams to ensure that state water quality standards are not violated.	--	+Increase reclamation success. +Protect water quality.	Increased Restriction
W-3.7 Big Sandy W-3.11 Salt Wells	Reduce sediment and enhance water quality in the following watersheds: 4 J Basin — Killpecker Creek Vermillion Creek — Pacific Creek/Jack Morrow Upper Bitter Creek — Dry Sandy Creek Upper Salt Wells — 18-Mile Canyon Upper Green River Set priorities for development of watershed plans in Fiscal Year 1983.	873,945[1/]	-Will dictate additional constraints on development. +Will reduce sediment and enhance water quality.	Increased Restriction
W-6.1 Salt Wells	Give the Red Creek Watershed special protection through designation as an Area of Critical Environmental Concern. Coordinate steps with other BLM programs to achieve the following objectives stated in the 1980 Red Creek Watershed Management Plan: 1. Reduce gully erosion 2. Reduce streambank erosion 3. Reduce peak flow 4. Limit surface disturbing activities 5. Increase perennial grasses 6. Improve livestock distribution 7. Improve wildlife distribution 8. Establish water gauging/water quality monitoring station.	67,058	-Will dictate additional constraints on development. +Will reduce sediment and enhance water quality.	Increased Restriction

Table 2 (Continued)

Number and Resource Area	Proposed Decision	Acreage Affected	Effect if Implemented	Status
WL-6.1 Salt Wells WL-9.1 Big Sandy	In order to protect nests and surrounding habitat of eagles, peregrine and prairie falcons, and ferruginous hawks, keep surface disturbance within roughly 1/2 to 1 mile to a minimum. Distance will vary according to species of raptor, terrain, vegetative screening, and type of activity. Authorize no action within this zone that would destroy nesting sites.	--	-Require some spacing adjustments and some directional drilling. +Protect raptors.	Present Practice
	Also protect cliffs, bluffs, rock outcrops, and pinnacles with potential raptor nest sites (golden eagles, red-tail hawks, and prairie falcons).	--		
WL-8.3 Salt Wells	Keep surface disturbance within boundaries of identified prairie dog towns outside of the Rock Springs Known Recoverable Coal Resource Area to a minimum. In addition, write Habitat Management Plans (HMPs) for key wildlife species associated with the prairie dog ecosystem, (burrowing owl, ferret, golden eagle, ferruginous hawk). Cooperate with the Wyoming Game and Fish Department to discourage recreational shooting of prairie dogs within the planning unit.	--	No change.	Present Practice
WL-9.1 Salt Wells	Allow no surface occupancy on Pine Butte area (Section 4, T. 15 N., R. 100 W. and SE 1/4 of Section 32, T. 16 N., R. 100 W.) to protect and manage this important raptor area. Acquire the surface and minerals of private lands around Pine Butte or pursue cooperative agreements with private landowners (Sections 5 and 9, T. 15 N., R. 100 W., and Section 33, T. 16 N., R. 100 W.) to more effectively protect and manage this important raptor area.	440	+Protect important natural feature. -Some hydrocarbons may not be accessible.	Increased Restriction
WL-9.2 Salt Wells	Allow no surface disturbance within precocious milkvetch populations (portions of: Section 31, T. 13 N., R. 110 W., and portions of: Sections 25-27 and 32-36, T. 13 N., R. 111 W.) to protect this sensitive plant.	240	+Protect sensitive plant population. -May require directional drilling or spacing waivers.	Increased Restriction
WL-6.4 Big Sandy	Exercise seasonal road closures near Steamboat Rim during the months of May and June to prevent disturbance during elk calving periods.	30,515[1/]	-Require annual planning by operators. +Protect a unique elk herd.	Increased Restriction
WL-3.5 Big Sandy	Require that surface disturbing activities be allowed no closer than 660 feet of live water streams and 500 feet of streambeds of major ephemeral waterways. Mineral leases will be issued with this stipulation.	Entire Area	No change.	Present Situation
WL-9.3 Big Sandy	Attempt to acquire by land exchange additional high quality raptor habitat at Black Rock. Withdraw the land to preclude mineral entry. Mineral leasing will be allowed with no surface occupancy. Designate an undisturbed buffer zone in a one mile radius of the cliffs.	--	-Require spacing waivers and directional drilling. +Protect raptors. -Some minerals could not be extracted.	Increased Restriction
WL-9.4 Big Sandy	Withdraw 2,560 acres of Oregon Buttes from mineral entry to assure maintenance of this unique area. Protect the area from the impact of mineral production through stringent lease stipulations.	2,560	-Require spacing adjustments and some directional drilling. +Protect unique features.	Increased Restriction
WL-9.7 Big Sandy WL-5.3 Salt Wells	Allow no activity or disturbance within 1/4 mile from the center of a sage grouse strutting ground. Restrict activities within an additional 1 3/4 mile radius of these breeding complexes. Allow petroleum exploration and drilling within this 1 3/4 mile buffer zone during the period of June 15 until March 1, providing strict requirements for rehabilitation are enforced.	14,742[1/] 941,031[1/]	+Protect sage grouse populations. -May require spacing waivers or directional drilling.	Present Situation
WL-9.8 Big Sandy	Restrict activity within big game winter ranges between the period from December 16 to March 31.	1,471,724[1/]	+Protect wildlife populations. -Restrict flexibility in development.	Present Situation

Table 2 (Continued)

Number and Resource Area	Proposed Decision	Acreage Affected	Effect if Implemented	Status
R-1.2 Big Sandy	Protect the natural values of the Boar's Tusk, Pilot Butte, Emmon's Cone, Steamboat Mountain, and Elk Mountain from the impacts which result from mineral development through the enforcement of special stipulations such as no surface occupancy.	10,240[1]	+Protect unique natural features. -May require directional drilling or spacing waivers.	Increased Restriction
R-1.3 Big Sandy	Manage the Wind River Front, Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Killpecker Sand Dunes, and Cedar Canyon to assure their continuing value for recreational opportunities. Activity plans will be developed which will provide for preservation and management.	135,000[1]	+Protect unique natural features. -May require directional drilling or spacing waivers.	Increased Restriction
R-1.5 R-1.6 R-1.7 R-1.8 Big Sandy	Protect the natural values of the Greater Sand Dunes, the Oregon Buttes, the Natural Corrals, and Cedar Canyon by nominating them as Areas of Critical Environmental Concern (ACECs). The nomination of these areas as ACECs may result in: protective stipulations (or, in some cases, administrative closure) to limit the impacts associated with mineral development; limited access for ORVs; and/or patrol and detection to prevent damage to resources.	48,000[1]	+Protect unique natural features. -Some hydrocarbons may be lost.	Increased Restriction
R-1.9 Big Sandy	Upon promulgation of paleontological regulations, inventory and then develop an activity plan for the Farson Fossil Fish Beds. Process a protective withdrawal to close the 1,280 acre area to mineral entry and leasing.	1,280	-Loss of potential hydrocarbons. +Protection of unique resource.	Increased Restriction
R-4.3 Salt Wells	Sign the Sugarloaf petroglyphs and protectively fence and sign Pine Springs by the end of 1983; initiate patrol and surveillance of the Pine Springs site. These sites should also be placed within protective withdrawals. In addition, designate Pine Springs as an Area of Critical Environmental Concern.	80	+Protect unique values. -May require directional drilling or spacing waivers.	Present Situation
R-5.5 Big Sandy	Nominate White Mountain Petroglyphs as an Area of Critical Environmental Concern for the area's cultural values. The area will be protected by fencing of the petroglyphs, and enforcement of special stipulations to protect the area from defacement.	20	+Protect unique values. -May require directional drilling or spacing waivers.	Present Situation
R-8.3 Big Sandy	Develop a detailed management plan for the 14-Mile Recreation Area and place stringent stipulations on oil and gas operations to assure protection of the area.	2,560	-Require directional drilling. +Protect popular recreation resource.	Increased Restriction
R-6.1 R-6.2 R-6.3 Salt Wells R-10.1 R-10.2 R-10.3 Big Sandy	Manage the following Wilderness Study Areas under the Interim Management Policy and Guidelines for Lands Under Wilderness Review until they are either dropped from further wilderness consideration or Congress designates them officially as wilderness areas: WY-040-401 and 402 Devils Playground-Twin Buttes WY-040-406 Red Creek Badlands WY-040-408 Adobe Town WY-040-307 Sand Dunes WY-040-335 Mill Creek WY-040-323 Honeycomb Buttes	188,126[1]	-Development on post FLPMA leases is constrained. +Wilderness values are protected pending decision.	Present Situation

Table 2 (Continued)

Number and Resource Area	Proposed Decision	Acreage Affected	Effect if Implemented	Status
	General Land Use Decisions			
L-4.1 Big Sandy/Salt Wells	Establish utility corridors in cooperation with industry, private landowners, and government agencies. This will require development of utility corridor plans prior to the end of Fiscal Year 1983. Upon establishment of utility corridors, restrict additional utility lines along Interstate 80 between Point of Rocks and Green River (this is the existing corridor which parallels I-80) to local distribution service lines.	Entire Area	+Many adverse impacts would be mitigated. -Cost sharing requirements may have to be developed and enforced. Some pipelines, etc. may be more expensive.	Increased Restriction
M-1.1 Salt Wells M-2.3 Big Sandy	Keep the entire area open to geophysical exploration and process and approve all notices of intent to conduct geophysical exploration (subject to appropriate surface protection stipulations).	Entire Area	No change.	Present Situation
M-2.2 Big Sandy	Keep the entire area open to oil and gas leasing (subject to appropriate surface protection and rehabilitation stipulations), with the exception of those lands in Rock Springs proposed expansion area and in Wilderness Study Areas.	Entire Area	No change.	Present Situation
M-1.2 Salt Wells	Keep the entire Salt Wells Planning Unit open to oil and gas leasing subject to appropriate surface protection and rehabilitation stipulations.	Entire Area	No change.	Present Situation
M-1.3 Salt Wells M-2.1 Big Sandy	Continue to develop surface protection and rehabilitation plans for all producing oil and gas fields and units within the area with coordination and cooperation with the Geological Survey and the operators. Give top priority to old and depleted fields such as Black Buttes Creek, Middle and South Baxter Basin, Bartlette, Six Mile, Leo, and Antelope.	Entire Area	No change.	Present Situation
W-1.2 Big Sandy/Salt Wells	Manage known fragile areas throughout the area so as to maintain or reduce erosion levels and improve vegetation cover. Study the remainder of the planning unit to identify additional fragile areas, and where appropriate, develop guidelines necessary to protect these areas.	Unknown	+Reduce erosion. -Constrain development.	Present Situation
W-2.2 Salt Wells	Grade, drain, and surface roads with significant erosion potential in high use areas. In addition, cooperate with users to provide free materials (gravel) to be used for surfacing major roads on the BLM transportation plan.	Entire Area	+Reduce erosion. +Improve multiple use of roads.	Decreased Restriction
W-2.6 Big Sandy	At the direction of the Area Manager, developers may be required to take soil samples and prepare soil conservation plans for projects involving disturbance of large surface areas and for projects in known problem soil areas.	Entire Area	+Preclude soil loss. -Focus solutions.	Increased Restriction
W-2.7 Big Sandy	Inventory roads and trails to determine those causing erosion and degradation of water quality. Road rehabilitation or road closures will be implemented. Any road closures will be coordinated with private landowners, local government, and principal users.	Entire Area	+Reduce erosion. -Focus solutions.	Increased Restriction
W-3.8 Big Sandy W-3.5 Salt Wells	Require that all new road construction meet minimum BLM and Wyoming Highway Department standards. Restrict construction across ephemeral or perennial streams during spring runoff.	Entire Area	-Increase cost of development. +Prevent or reduce adverse impacts.	Increased Restriction
W-3.13 Big Sandy	Develop a plan to demonstrate the benefit of snow utilization in reclamation of oil and gas drill sites.	Entire Area	+Increase reclamation success.	NA
W-3.14 Big Sandy W-3.9 Salt Wells	Implement a program to monitor water quality for all water wells drilled in the area. All data is to be entered into the Geological Survey WATSTORE system, Environmental Protection Agency's Storet system, and the University of Wyoming WRDS system.	Entire Area	-Increase reporting and disclosure requirements. +Improve public data base.	NA

Table 2 (Continued)

Number and Resource Area	Proposed Decision	Acreage Affected	Effect if Implemented	Status
WL-2.1 Salt Wells WL-8.1 Big Sandy	On deer crucial winter ranges where vegetative manipulation is planned or other vegetative disturbance has occurred, include a variety of high quality shrub seeds such as winterfat, shadscale, four-wing saltbush, and, in certain instances, mountain mahogany and antelope bitterbrush, to complement the usual grass mixture.	Entire Area	-Increase reclamation costs. +Mitigate habitat loss to development.	Present Situation
WL-5.4 Salt Wells	Do not require planting of sagebrush seed in reclamation of disturbed area; however, require the planting of sagebrush seedlings in key wildlife areas.	Entire Area	+Decrease cost and complexity of reclamation.	Decreased Restriction
WL-3.9 Big Sandy	Modify existing stream crossings (i.e., culverts) which are impeding the movement of aquatic life forms. Assure all proposed stream crossings are designed so as not to obstruct aquatic movement.	Entire Area	-Slight increase in development cost. +Aquatic habitat enhanced.	Increased Restriction
S-3.3 Big Sandy	Assume full maintenance for all high use roads on the area transportation plan. Maintenance is to be accomplished by contract or force account and the cost prorated among commercial users and the BLM according to the extent of use.	Entire Area	+Increase control of practices. -Additional personnel and equipment requirements.	Increased Restriction

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[1] The acres affected by each proposed decision often overlap areas affected by another proposed decision. Therefore, the total acres affected by all of the proposed decisions will be less than the sum of the individual listings.

Table 3

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Name	Location	Size (acres)	Critical Values	Possible Protective Measures
1. Red Creek Badlands (SW)	35 miles S of Rock Springs	67,058	Watershed (highly erodible soils), wildlife	Strictly control disturbing activities from Dec. 15 to May 15. Conduct all activities in accordance with Red Creek Watershed Plan.
2. Cedar Canyon (BS)	20 miles N of Rock Springs	2,560	Cultural, wildlife, natural system, recreation, scenic	Develop stipulations to restrict mineral development. Access control and interpretation would address public misuse (petroglyph defacement, harassment, or destruction of raptors.)
3. (Greater) Sand Dunes (BS)	30 miles N of Rock Springs	38,480	Recreation, scenic, cultural, natural system, wildlife.	Develop protective stipulations to restrict mineral development. Limit access for ORVs. Patrol/detection to protect cultural resources.
4. Oregon Buttes (BS)	35 miles ENE of Farson	3,840	Cultural, recreation, scenic, wildlife, natural system	Restrict ORVs and overnight camping to specific areas, develop interpretive trails (nature), patrol/detection to alleviate vandalism, and restrict mineral development.
5. Natural Corrals (BS)	5 miles NE of Superior	1,116	Cultural, recreation, natural system, (geologic values), scenic	Develop stipulations to restrict mineral development and consolidate land ownership through land exchange for uniform protection of values.
6. Pine Springs (SW)	43 miles SW of Green River	40	Cultural, natural system (unique plant community)	No surface occupancy or disturbing activities
7. White Mountain Petroglyphs (BS)	20 miles N of Rock Springs	20	Cultural, wildlife, recreation	Develop protective stipulations to restrict mineral development. Patrol/detection to prevent defacement of cultural values. Fence off a portion of the site and provide interpretive information.

Abbreviations

BS = Big Sandy Resource Area
SW = Salt Wells Resource Area

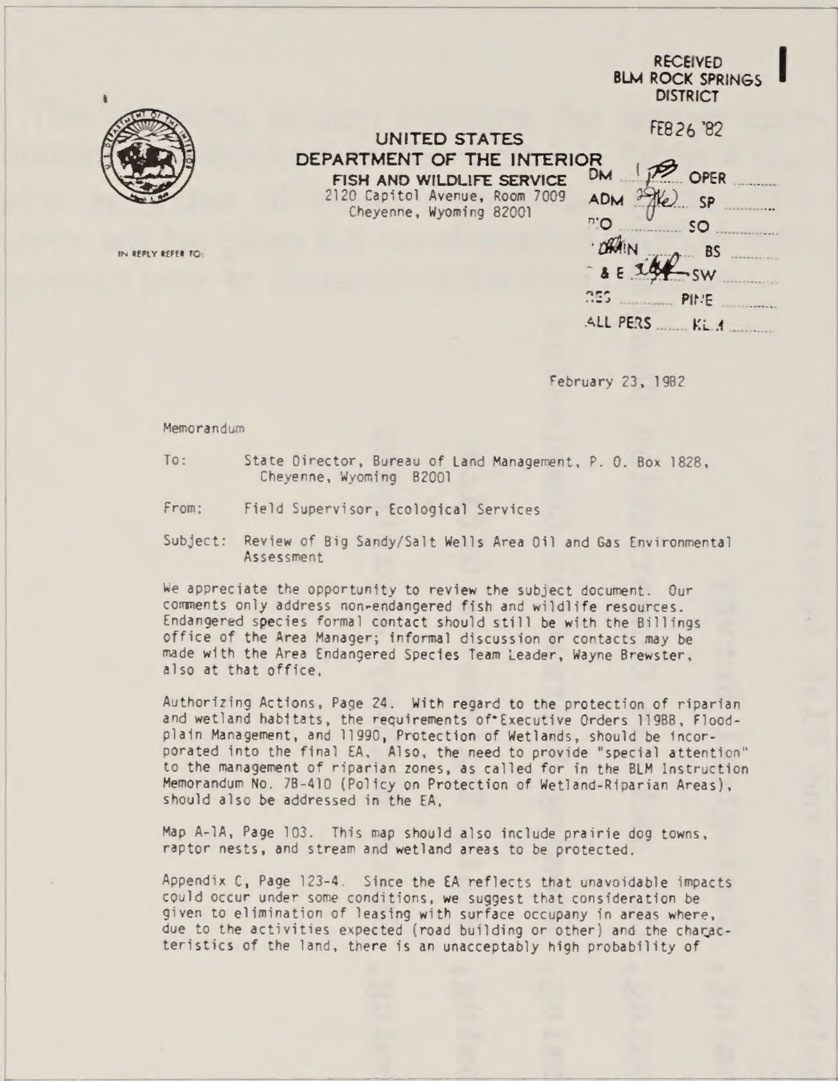
PUBLIC COMMENTS AND RESPONSES

The following section contains the written communications received on the draft EA. Table 4 contains an index of these comments. These comments will be given full consideration by BLM management prior to issuance of the final decision.

Table 4

INDEX OF OFFICIAL COMMENTS

Index No.	Date Received	Agency, Organization, Individual
1	2/26/82	Fish and Wildlife Service
2	2/11/82	State of Wyoming, Governor, Ed Herschler
3	2/11/82	State of Wyoming, Department of Environmental Quality
4	2/11/82	State of Wyoming, Game and Fish Department
5	2/11/82	State of Wyoming, Geological Survey
6	2/11/82	State of Wyoming, Oil and Gas Conservation Commission
7	2/11/82	State of Wyoming, Wyoming Recreation Commission
8	2/11/82	State of Wyoming, State Engineer's Office
9	2/11/82	State of Wyoming, State Highway Department



RECEIVED
BLM ROCK SPRINGS
DISTRICT

FEB 26 '82

1

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
2120 Capitol Avenue, Room 7009
Cheyenne, Wyoming 82001

IN REPLY REFER TO:

DM .... OPER ....
ADM .... SP ....
PIO .... SO ....
ADMIN .... BS ....
& E .... SW ....
RES .... PINE ....
ALL PERS .... KEM ....

February 23, 1982

Memorandum

To: State Oirector, Bureau of Land Management, P. O. Box 1828, Cheyenne, Wyoming B2001

From: Field Supervisor, Ecological Services

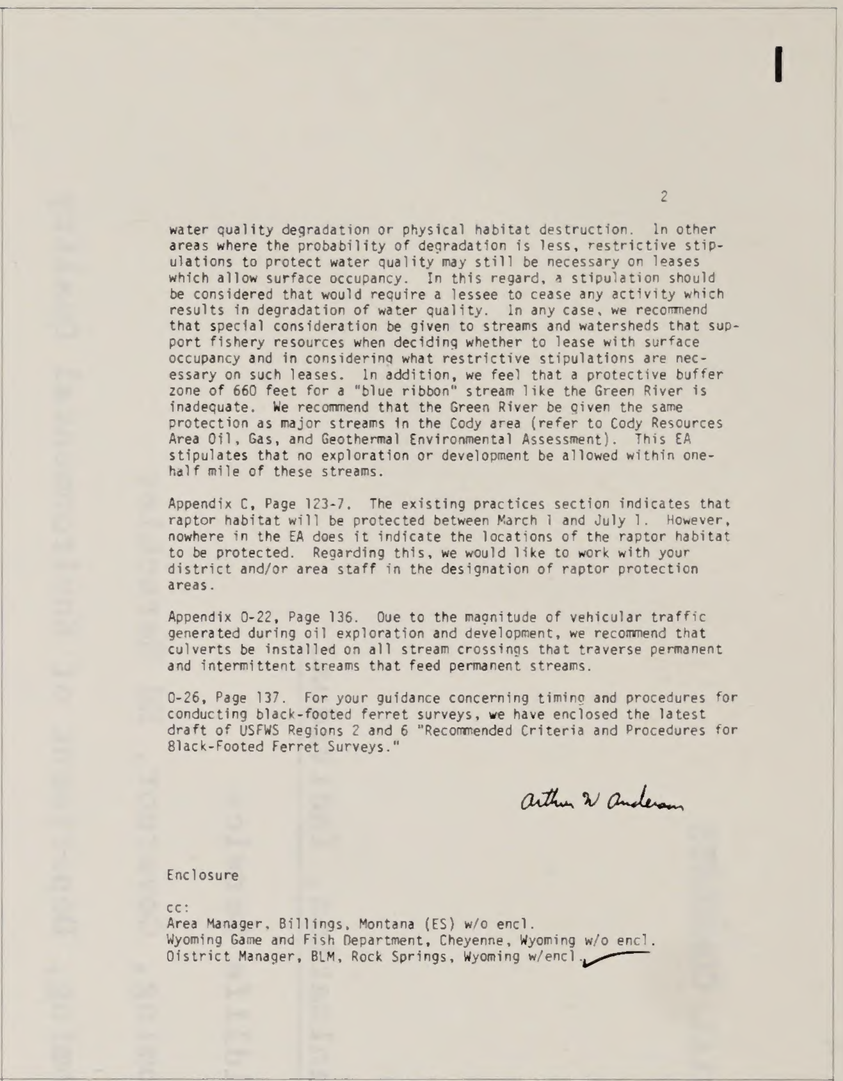
Subject: Review of Big Sandy/Salt Wells Area Oil and Gas Environmental Assessment

We appreciate the opportunity to review the subject document. Our comments only address non-endangered fish and wildlife resources. Endangered species formal contact should still be with the Billings office of the Area Manager; informal discussion or contacts may be made with the Area Endangered Species Team Leader, Wayne Brewster, also at that office.

Authorizing Actions, Page 24. With regard to the protection of riparian and wetland habitats, the requirements of Executive Orders 119BB, Floodplain Management, and 11990, Protection of Wetlands, should be incorporated into the final EA. Also, the need to provide "special attention" to the management of riparian zones, as called for in the BLM Instruction Memorandum No. 7B-410 (Policy on Protection of Wetland-Riparian Areas), should also be addressed in the EA.

Map A-1A, Page 103. This map should also include prairie dog towns, raptor nests, and stream and wetland areas to be protected.

Appendix C, Page 123-4. Since the EA reflects that unavoidable impacts could occur under some conditions, we suggest that consideration be given to elimination of leasing with surface occupany in areas where, due to the activities expected (road building or other) and the characteristics of the land, there is an unacceptably high probability of



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water quality degradation or physical habitat destruction. In other areas where the probability of degradation is less, restrictive stipulations to protect water quality may still be necessary on leases which allow surface occupancy. In this regard, a stipulation should be considered that would require a lessee to cease any activity which results in degradation of water quality. In any case, we recommend that special consideration be given to streams and watersheds that support fishery resources when deciding whether to lease with surface occupancy and in considering what restrictive stipulations are necessary on such leases. In addition, we feel that a protective buffer zone of 660 feet for a "blue ribbon" stream like the Green River is inadequate. We recommend that the Green River be given the same protection as major streams in the Cody area (refer to Cody Resources Area Oil, Gas, and Geothermal Environmental Assessment). This EA stipulates that no exploration or development be allowed within one-half mile of these streams.

Appendix C, Page 123-7. The existing practices section indicates that raptor habitat will be protected between March 1 and July 1. However, nowhere in the EA does it indicate the locations of the raptor habitat to be protected. Regarding this, we would like to work with your district and/or area staff in the designation of raptor protection areas.

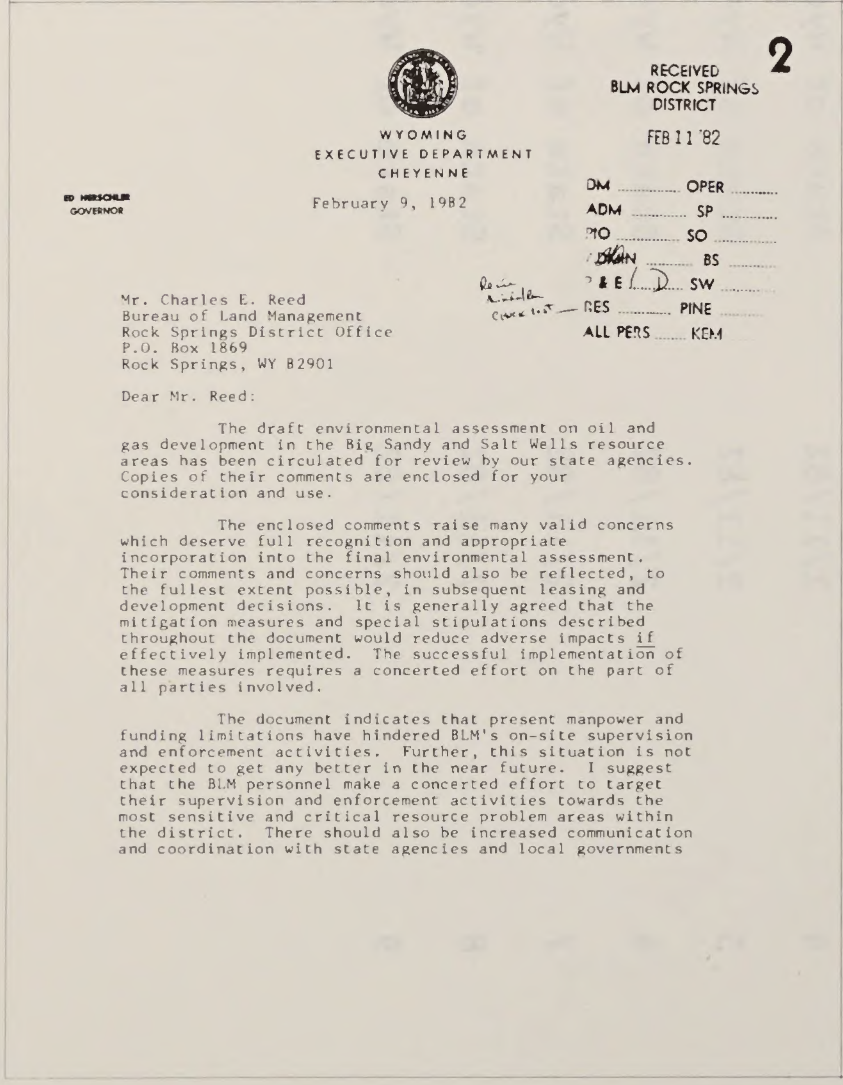
Appendix 0-22, Page 136. Oue to the magnitude of vehicular traffic generated during oil exploration and development, we recommend that culverts be installed on all stream crossings that traverse permanent and intermittent streams that feed permanent streams.

0-26, Page 137. For your guidance concerning timing and procedures for conducting black-footed ferret surveys, we have enclosed the latest draft of USFWS Regions 2 and 6 "Recommended Criteria and Procedures for 8lack-Footed Ferret Surveys."

Arthur W Anderson

Enclosure

cc:
Area Manager, Billings, Montana (ES) w/o encl.
Wyoming Game and Fish Department, Cheyenne, Wyoming w/o encl.
Oistrict Manager, BLM, Rock Springs, Wyoming w/encl.



RECEIVED
BLM ROCK SPRINGS
DISTRICT

FEB 11 '82

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WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

ED HERSCHLER
GOVERNOR

February 9, 1982

DM .... OPER ....
ADM .... SP ....
PIO .... SO ....
ADMIN .... BS ....
& E .... SW ....
RES .... PINE ....
ALL PERS .... KEM

Review [illegible] Check list

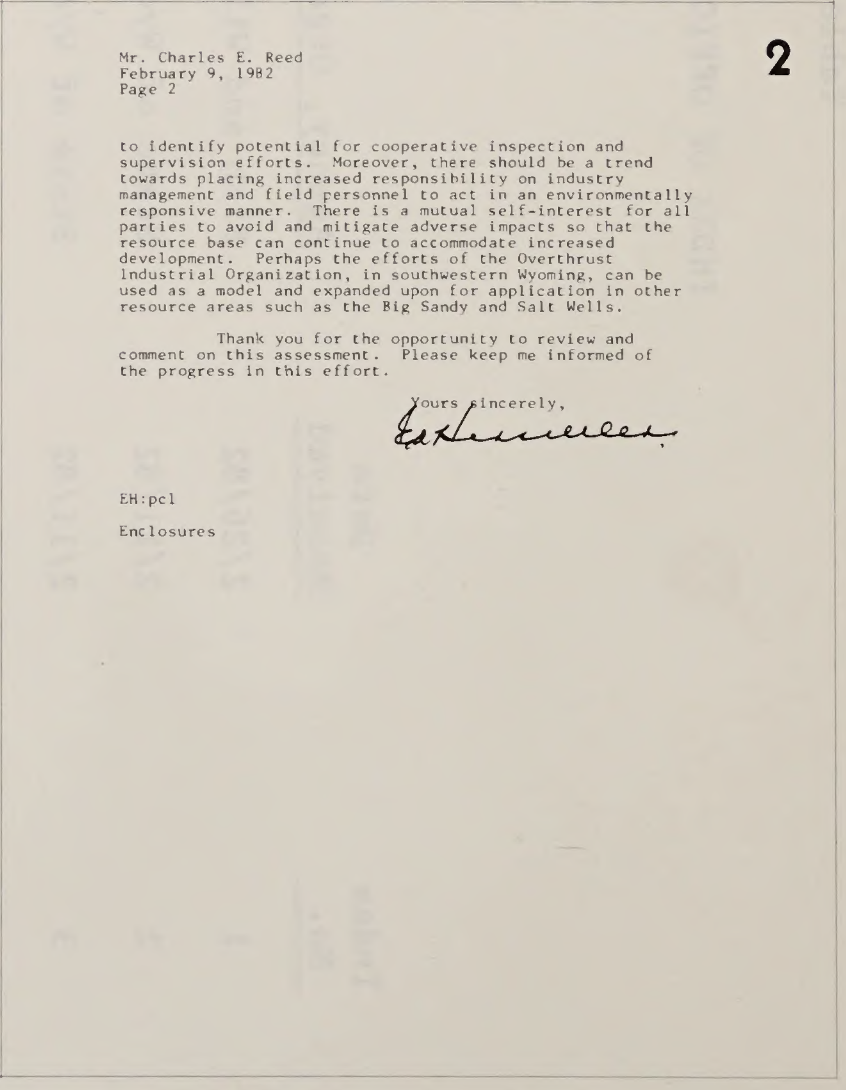
Mr. Charles E. Reed
Bureau of Land Management
Rock Springs District Office
P.O. Box 1869
Rock Springs, WY B2901

Dear Mr. Reed:

The draft environmental assessment on oil and gas development in the Big Sandy and Salt Wells resource areas has been circulated for review by our state agencies. Copies of their comments are enclosed for your consideration and use.

The enclosed comments raise many valid concerns which deserve full recognition and appropriate incorporation into the final environmental assessment. Their comments and concerns should also be reflected, to the fullest extent possible, in subsequent leasing and development decisions. It is generally agreed that the mitigation measures and special stipulations described throughout the document would reduce adverse impacts if effectively implemented. The successful implementation of these measures requires a concerted effort on the part of all parties involved.

The document indicates that present manpower and funding limitations have hindered BLM's on-site supervision and enforcement activities. Further, this situation is not expected to get any better in the near future. I suggest that the BLM personnel make a concerted effort to target their supervision and enforcement activities towards the most sensitive and critical resource problem areas within the district. There should also be increased communication and coordination with state agencies and local governments



Mr. Charles E. Reed
February 9, 1982
Page 2

2

to identify potential for cooperative inspection and supervision efforts. Moreover, there should be a trend towards placing increased responsibility on industry management and field personnel to act in an environmentally responsive manner. There is a mutual self-interest for all parties to avoid and mitigate adverse impacts so that the resource base can continue to accommodate increased development. Perhaps the efforts of the Overthrust Industrial Organization, in southwestern Wyoming, can be used as a model and expanded upon for application in other resource areas such as the Big Sandy and Salt Wells.

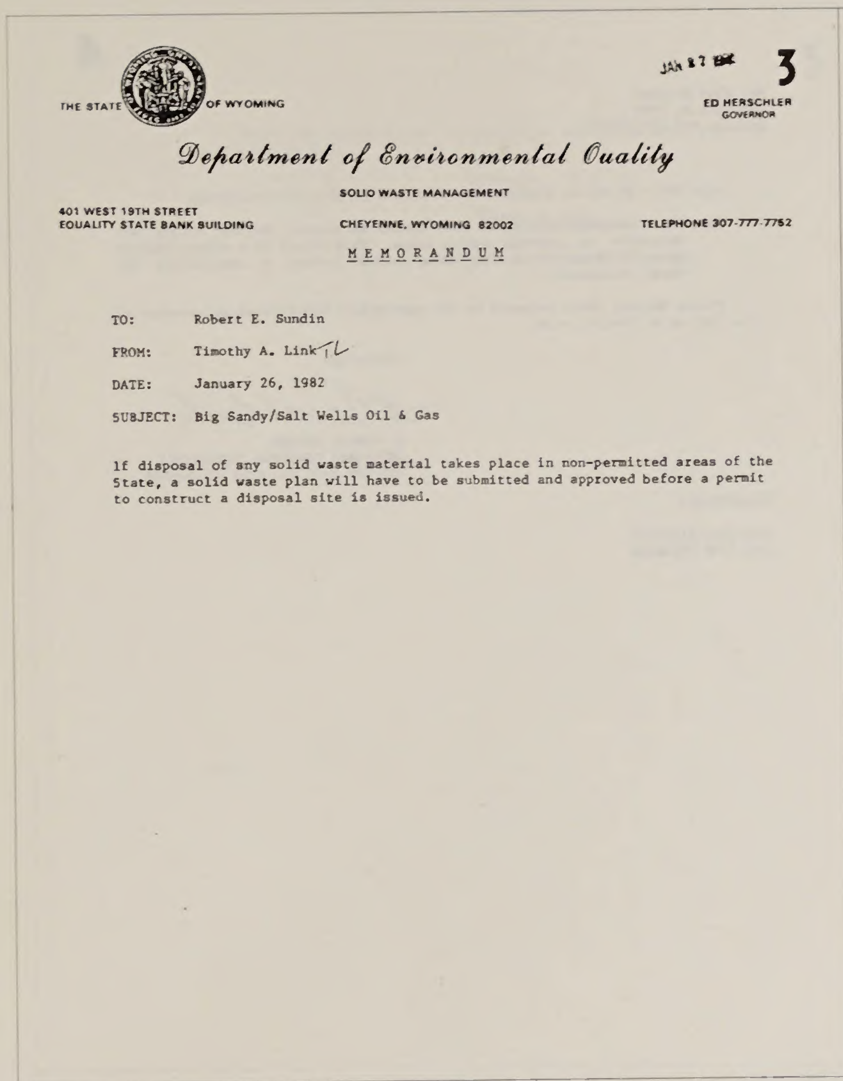
Thank you for the opportunity to review and comment on this assessment. Please keep me informed of the progress in this effort.

Yours sincerely,

Ed Herschler

EH:pcl

Enclosures



JAN 27 19

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THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

SOLID WASTE MANAGEMENT

401 WEST 19TH STREET
EQUALITY STATE BANK BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307-777-7752

M E M O R A N D U M

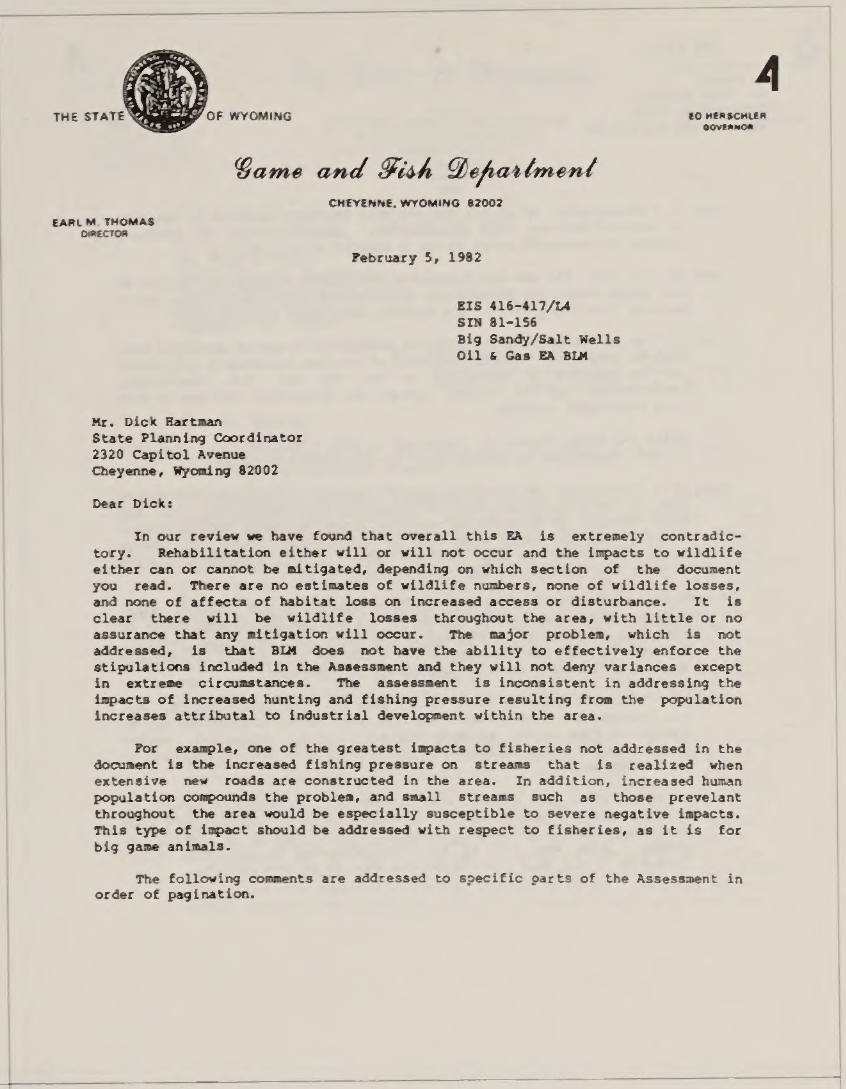
TO: Robert E. Sundin

FROM: Timothy A. Link TL

DATE: January 26, 1982

SUBJECT: Big Sandy/Salt Wells Oil & Gas

If disposal of any solid waste material takes place in non-permitted areas of the State, a solid waste plan will have to be submitted and approved before a permit to construct a disposal site is issued.



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THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002

EARL M. THOMAS
DIRECTOR

February 5, 1982

EIS 416-417/L4
SIN 81-156
Big Sandy/Salt Wells
Oil & Gas EA BLM

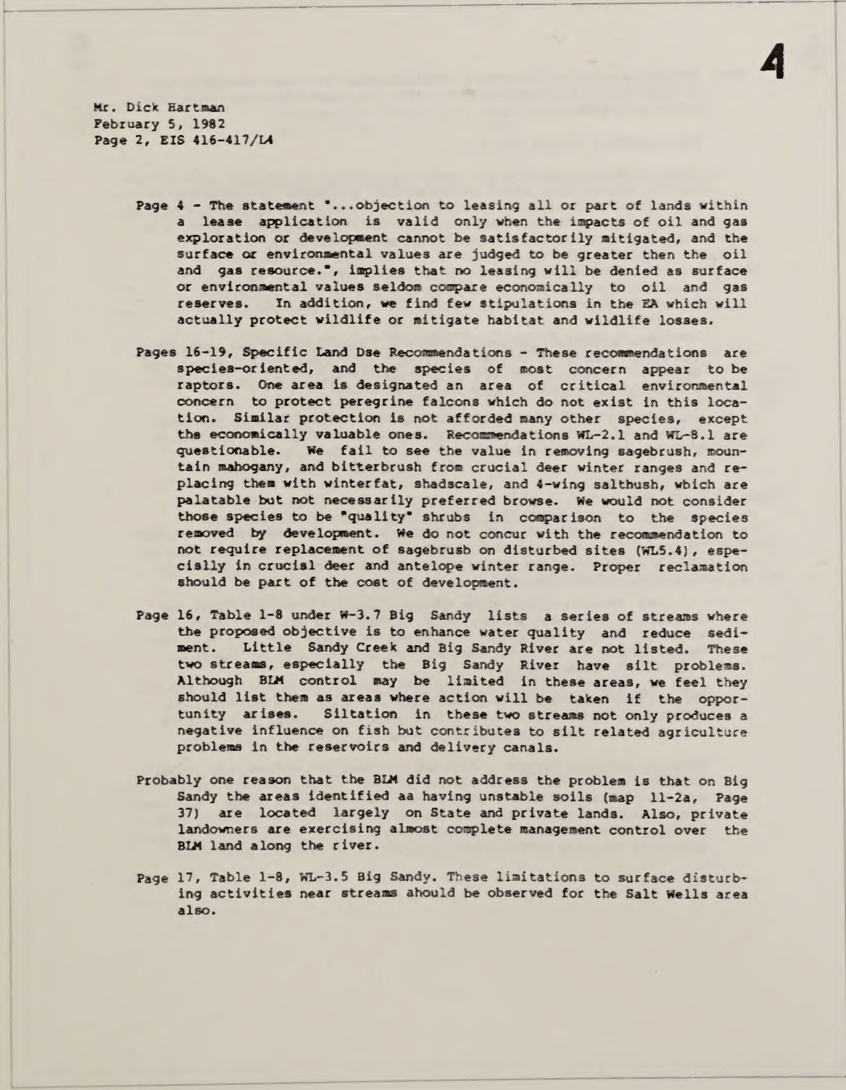
Mr. Dick Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Dick:

In our review we have found that overall this EA is extremely contradictory. Rehabilitation either will or will not occur and the impacts to wildlife either can or cannot be mitigated, depending on which section of the document you read. There are no estimates of wildlife numbers, none of wildlife losses, and none of affects of habitat loss on increased access or disturbance. It is clear there will be wildlife losses throughout the area, with little or no assurance that any mitigation will occur. The major problem, which is not addressed, is that BLM does not have the ability to effectively enforce the stipulations included in the Assessment and they will not deny variances except in extreme circumstances. The assessment is inconsistent in addressing the impacts of increased hunting and fishing pressure resulting from the population increases attributal to industrial development within the area.

For example, one of the greatest impacts to fisheries not addressed in the document is the increased fishing pressure on streams that is realized when extensive new roads are constructed in the area. In addition, increased human population compounds the problem, and small streams such as those prevelant throughout the area would be especially susceptible to severe negative impacts. This type of impact should be addressed with respect to fisheries, as it is for big game animals.

The following comments are addressed to specific parts of the Assessment in order of pagination.



4

Mr. Dick Hartman
February 5, 1982
Page 2, EIS 416-417/L4

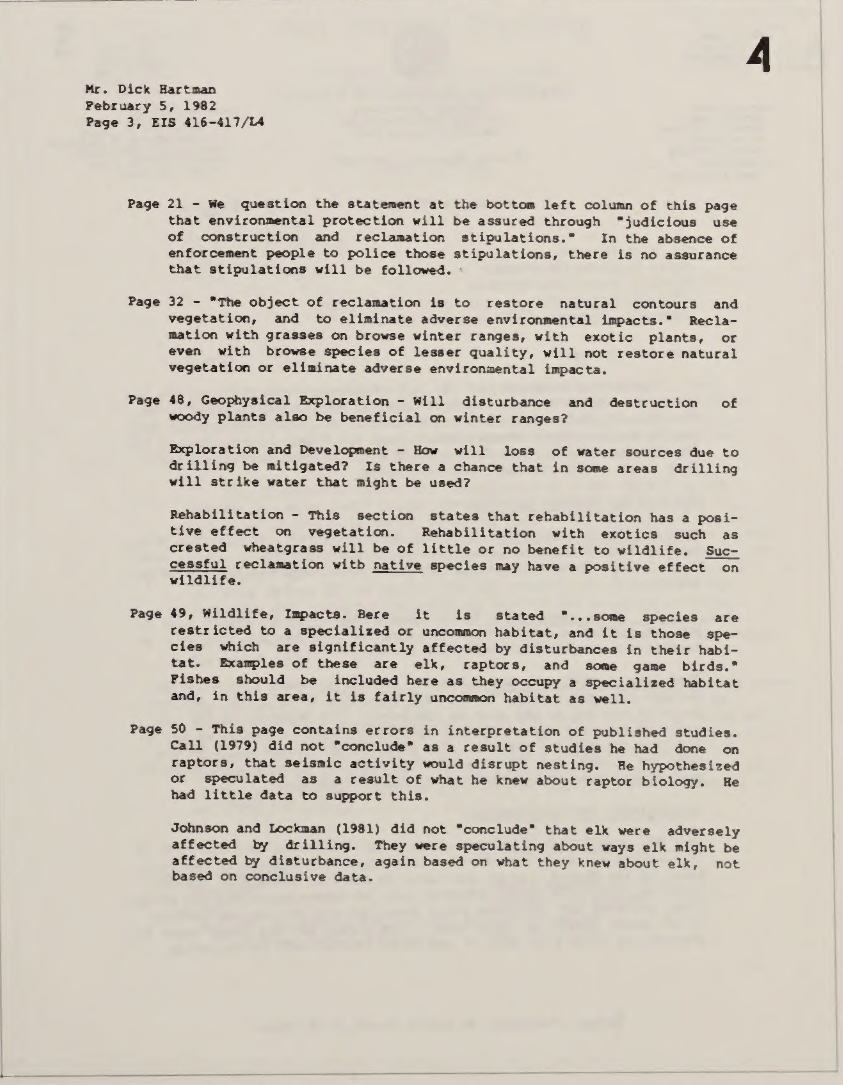
Page 4 - The statement "...objection to leasing all or part of lands within a lease application is valid only when the impacts of oil and gas exploration or development cannot be satisfactorily mitigated, and the surface or environmental values are judged to be greater then the oil and gas resource.", implies that no leasing will be denied as surface or environmental values seldom compare economically to oil and gas reserves. In addition, we find few stipulations in the EA which will actually protect wildlife or mitigate habitat and wildlife losses.

Pages 16-19, Specific Land Use Recommendations - These recommendations are species-oriented, and the species of most concern appear to be raptors. One area is designated an area of critical environmental concern to protect peregrine falcons which do not exist in this location. Similar protection is not afforded many other species, except the economically valuable ones. Recommendations WL-2.1 and WL-8.1 are questionable. We fail to see the value in removing sagebrush, mountain mahogany, and bitterbrush from crucial deer winter ranges and replacing them with winterfat, shadscale, and 4-wing saltbush, which are palatable but not necessarily preferred browse. We would not consider those species to be "quality" shrubs in comparison to the species removed by development. We do not concur with the recommendation to not require replacement of sagebrush on disturbed sites (WL5.4), especially in crucial deer and antelope winter range. Proper reclamation should be part of the cost of development.

Page 16, Table 1-8 under W-3.7 Big Sandy lists a series of streams where the proposed objective is to enhance water quality and reduce sediment. Little Sandy Creek and Big Sandy River are not listed. These two streams, especially the Big Sandy River have silt problems. Although BLM control may be limited in these areas, we feel they should list them as areas where action will be taken if the opportunity arises. Siltation in these two streams not only produces a negative influence on fish but contributes to silt related agriculture problems in the reservoirs and delivery canals.

Probably one reason that the BLM did not address the problem is that on Big Sandy the areas identified as having unstable soils (map 11-2a, Page 37) are located largely on State and private lands. Also, private landowners are exercising almost complete management control over the BLM land along the river.

Page 17, Table 1-8, WL-3.5 Big Sandy. These limitations to surface disturbing activities near streams should be observed for the Salt Wells area also.



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Mr. Dick Hartman
February 5, 1982
Page 3, EIS 416-417/L4

Page 21 - We question the statement at the bottom left column of this page that environmental protection will be assured through "judicious use of construction and reclamation stipulations." In the absence of enforcement people to police those stipulations, there is no assurance that stipulations will be followed.

Page 32 - "The object of reclamation is to restore natural contours and vegetation, and to eliminate adverse environmental impacts." Reclamation with grasses on browse winter ranges, with exotic plants, or even with browse species of lesser quality, will not restore natural vegetation or eliminate adverse environmental impacts.

Page 48, Geophysical Exploration - Will disturbance and destruction of woody plants also be beneficial on winter ranges?

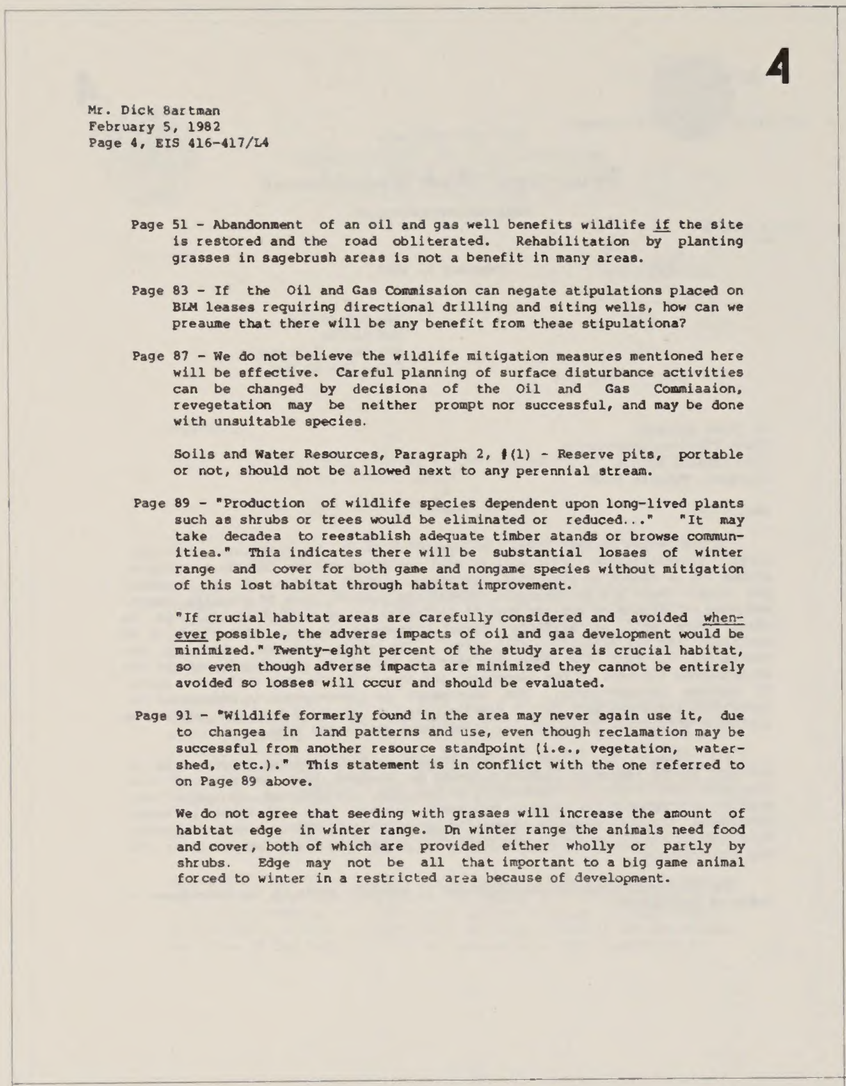
Exploration and Development - How will loss of water sources due to drilling be mitigated? Is there a chance that in some areas drilling will strike water that might be used?

Rehabilitation - This section states that rehabilitation has a positive effect on vegetation. Rehabilitation with exotics such as crested wheatgrass will be of little or no benefit to wildlife. Successful reclamation with native species may have a positive effect on wildlife.

Page 49, Wildlife, Impacts. Here it is stated "...some species are restricted to a specialized or uncommon habitat, and it is those species which are significantly affected by disturbances in their habitat. Examples of these are elk, raptors, and some game birds." Fishes should be included here as they occupy a specialized habitat and, in this area, it is fairly uncommon habitat as well.

Page 50 - This page contains errors in interpretation of published studies. Call (1979) did not "conclude" as a result of studies he had done on raptors, that seismic activity would disrupt nesting. He hypothesized or speculated as a result of what he knew about raptor biology. He had little data to support this.

Johnson and Lockman (1981) did not "conclude" that elk were adversely affected by drilling. They were speculating about ways elk might be affected by disturbance, again based on what they knew about elk, not based on conclusive data.



4

Mr. Dick Hartman
February 5, 1982
Page 4, EIS 416-417/L4

Page 51 - Abandonment of an oil and gas well benefits wildlife _if_ the site is restored and the road obliterated. Rehabilitation by planting grasses in sagebrush areas is not a benefit in many areas.

Page 83 - If the Oil and Gas Commission can negate stipulations placed on BLM leases requiring directional drilling and siting wells, how can we presume that there will be any benefit from these stipulations?

Page 87 - We do not believe the wildlife mitigation measures mentioned here will be effective. Careful planning of surface disturbance activities can be changed by decisions of the Oil and Gas Commission, revegetation may be neither prompt nor successful, and may be done with unsuitable species.

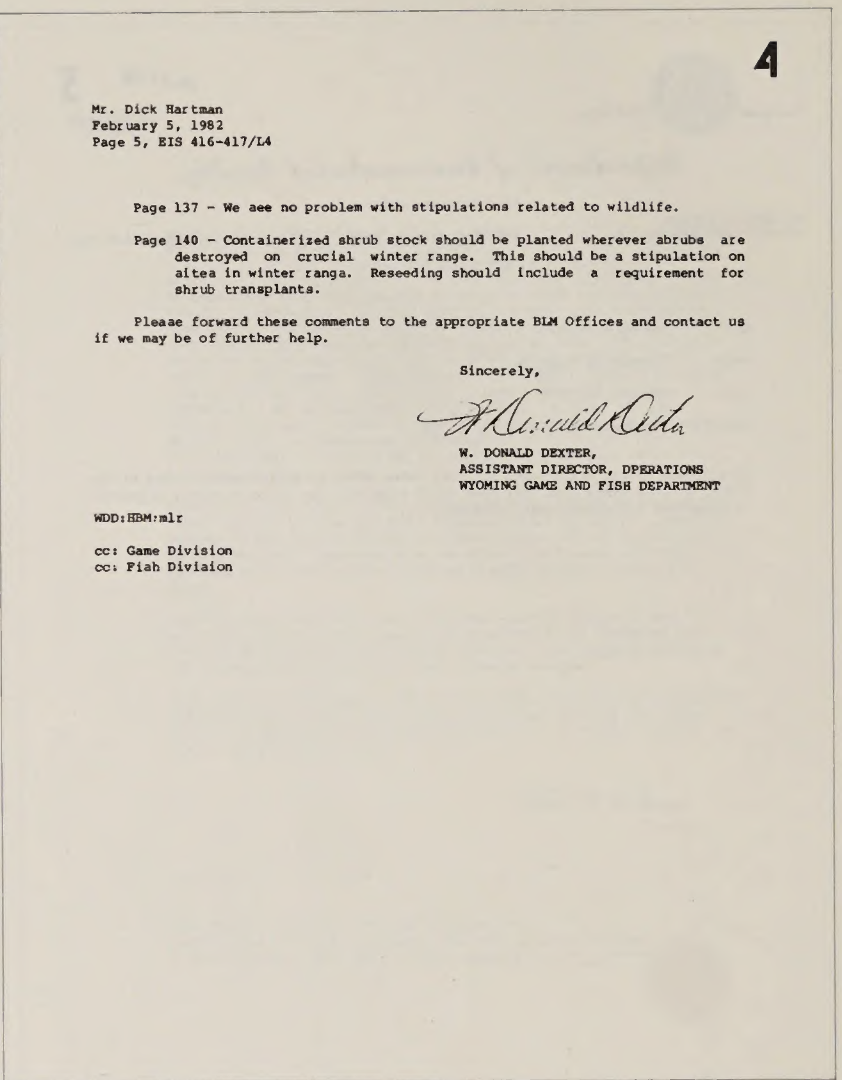
Soils and Water Resources, Paragraph 2, #(1) - Reserve pits, portable or not, should not be allowed next to any perennial stream.

Page 89 - "Production of wildlife species dependent upon long-lived plants such as shrubs or trees would be eliminated or reduced..." "It may take decades to reestablish adequate timber stands or browse communities." This indicates there will be substantial losses of winter range and cover for both game and nongame species without mitigation of this lost habitat through habitat improvement.

"If crucial habitat areas are carefully considered and avoided _whenever_ possible, the adverse impacts of oil and gas development would be minimized." Twenty-eight percent of the study area is crucial habitat, so even though adverse impacts are minimized they cannot be entirely avoided so losses will occur and should be evaluated.

Page 91 - "Wildlife formerly found in the area may never again use it, due to changes in land patterns and use, even though reclamation may be successful from another resource standpoint (i.e., vegetation, watershed, etc.)." This statement is in conflict with the one referred to on Page 89 above.

We do not agree that seeding with grasses will increase the amount of habitat edge in winter range. On winter range the animals need food and cover, both of which are provided either wholly or partly by shrubs. Edge may not be all that important to a big game animal forced to winter in a restricted area because of development.



4

Mr. Dick Hartman
February 5, 1982
Page 5, EIS 416-417/L4

Page 137 - We see no problem with stipulations related to wildlife.

Page 140 - Containerized shrub stock should be planted wherever shrubs are destroyed on crucial winter range. This should be a stipulation on sites in winter range. Reseeding should include a requirement for shrub transplants.

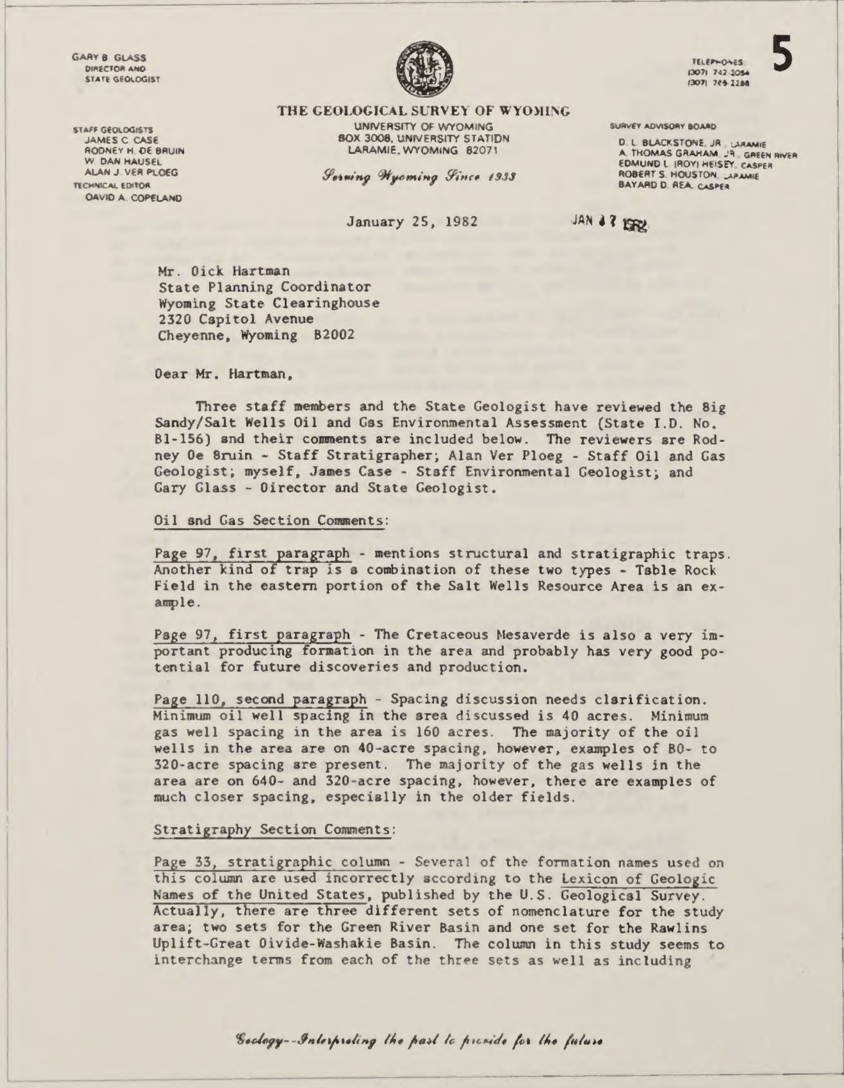
Please forward these comments to the appropriate BLM Offices and contact us if we may be of further help.

Sincerely,

W. DONALD DEXTER,
ASSISTANT DIRECTOR, OPERATIONS
WYOMING GAME AND FISH DEPARTMENT

WDD:HBM:mlr

cc: Game Division
cc: Fish Division



5

GARY B. GLASS
DIRECTOR AND
STATE GEOLOGIST

STAFF GEOLOGISTS
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RODNEY H. DE BRUIN
W. DAN HAUSEL
ALAN J. VER PLOEG
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January 25, 1982

JAN 27 1982

Mr. Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Mr. Hartman,

Three staff members and the State Geologist have reviewed the Big Sandy/Salt Wells Oil and Gas Environmental Assessment (State I.D. No. 81-156) and their comments are included below. The reviewers are Rodney De Bruin - Staff Stratigrapher; Alan Ver Ploeg - Staff Oil and Gas Geologist; myself, James Case - Staff Environmental Geologist; and Gary Glass - Director and State Geologist.

Oil and Gas Section Comments:

Page 97, first paragraph - mentions structural and stratigraphic traps. Another kind of trap is a combination of these two types - Table Rock Field in the eastern portion of the Salt Wells Resource Area is an example.

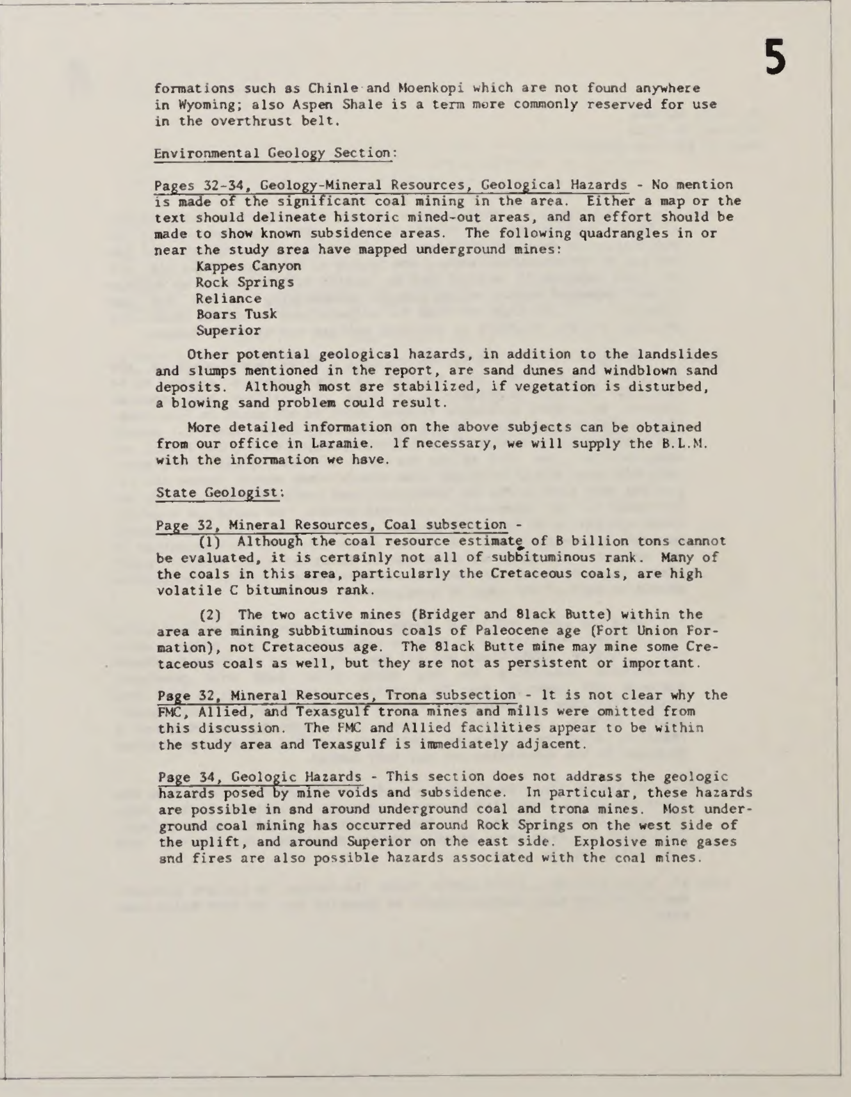
Page 97, first paragraph - The Cretaceous Mesaverde is also a very important producing formation in the area and probably has very good potential for future discoveries and production.

Page 110, second paragraph - Spacing discussion needs clarification. Minimum oil well spacing in the area discussed is 40 acres. Minimum gas well spacing in the area is 160 acres. The majority of the oil wells in the area are on 40-acre spacing, however, examples of 80- to 320-acre spacing are present. The majority of the gas wells in the area are on 640- and 320-acre spacing, however, there are examples of much closer spacing, especially in the older fields.

Stratigraphy Section Comments:

Page 33, stratigraphic column - Several of the formation names used on this column are used incorrectly according to the Lexicon of Geologic Names of the United States, published by the U.S. Geological Survey. Actually, there are three different sets of nomenclature for the study area; two sets for the Green River Basin and one set for the Rawlins Uplift-Great Divide-Washakie Basin. The column in this study seems to interchange terms from each of the three sets as well as including

Geology--Interpreting the past to provide for the future



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formations such as Chinle and Moenkopi which are not found anywhere in Wyoming; also Aspen Shale is a term more commonly reserved for use in the overthrust belt.

Environmental Geology Section:

Pages 32-34, Geology-Mineral Resources, Geological Hazards - No mention is made of the significant coal mining in the area. Either a map or the text should delineate historic mined-out areas, and an effort should be made to show known subsidence areas. The following quadrangles in or near the study area have mapped underground mines:

Kappes Canyon
Rock Springs
Reliance
Boars Tusk
Superior

Other potential geological hazards, in addition to the landslides and slumps mentioned in the report, are sand dunes and windblown sand deposits. Although most are stabilized, if vegetation is disturbed, a blowing sand problem could result.

More detailed information on the above subjects can be obtained from our office in Laramie. If necessary, we will supply the B.L.M. with the information we have.

State Geologist:

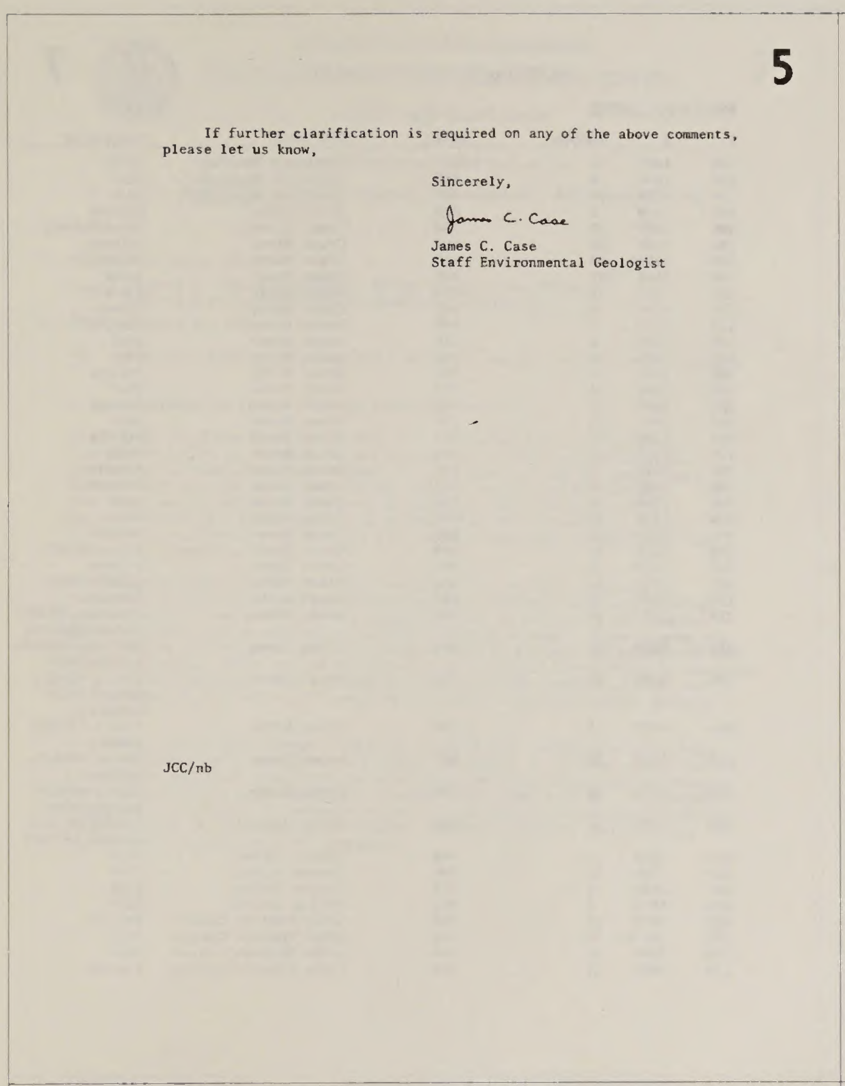
Page 32, Mineral Resources, Coal subsection -

(1) Although the coal resource estimate of 8 billion tons cannot be evaluated, it is certainly not all of subbituminous rank. Many of the coals in this area, particularly the Cretaceous coals, are high volatile C bituminous rank.

(2) The two active mines (Bridger and Black Butte) within the area are mining subbituminous coals of Paleocene age (Fort Union Formation), not Cretaceous age. The Black Butte mine may mine some Cretaceous coals as well, but they are not as persistent or important.

Page 32, Mineral Resources, Trona subsection - It is not clear why the FMC, Allied, and Texasgulf trona mines and mills were omitted from this discussion. The FMC and Allied facilities appear to be within the study area and Texasgulf is immediately adjacent.

Page 34, Geologic Hazards - This section does not address the geologic hazards posed by mine voids and subsidence. In particular, these hazards are possible in and around underground coal and trona mines. Most underground coal mining has occurred around Rock Springs on the west side of the uplift, and around Superior on the east side. Explosive mine gases and fires are also possible hazards associated with the coal mines.



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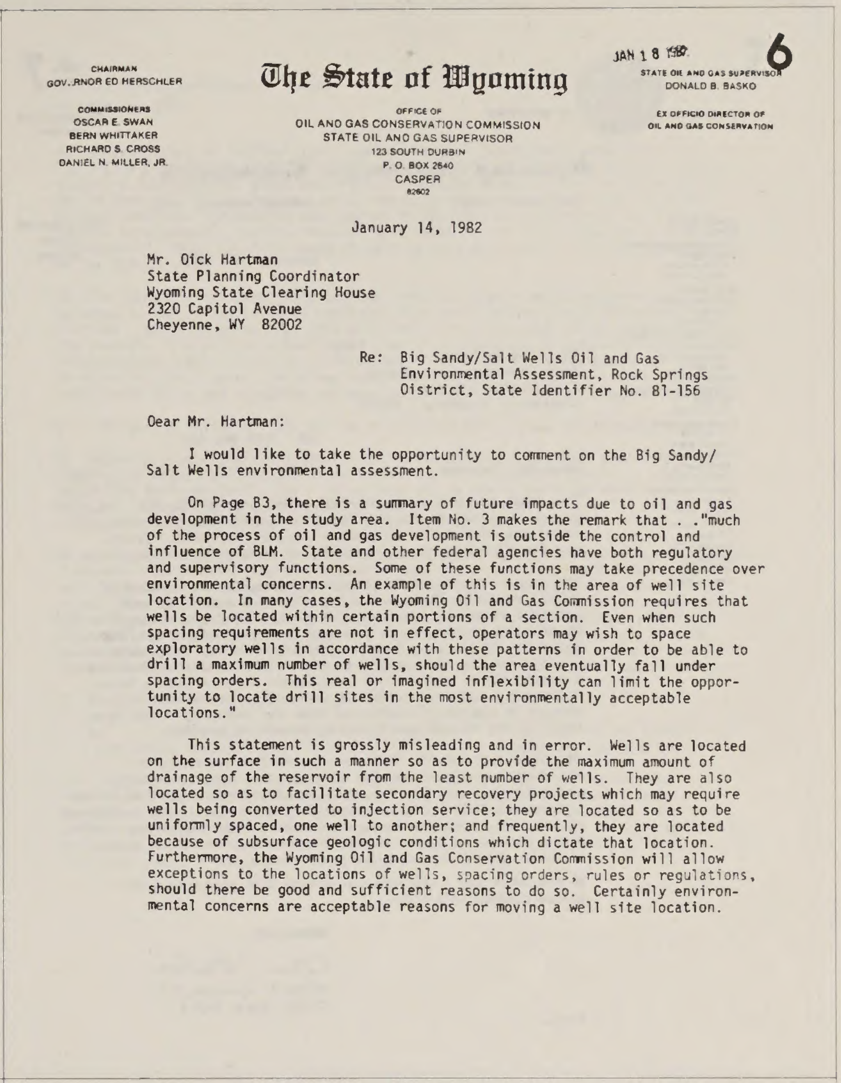
If further clarification is required on any of the above comments, please let us know,

Sincerely,

James C. Case

James C. Case
Staff Environmental Geologist

JCC/nb



JAN 18 1982

6

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The State of Wyoming

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STATE OIL AND GAS SUPERVISOR
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P. O. BOX 2640
CASPER
82602

STATE OIL AND GAS SUPERVISOR
DONALD B. BASKO

EX OFFICIO DIRECTOR OF
OIL AND GAS CONSERVATION

January 14, 1982

Mr. Dick Hartman
State Planning Coordinator
Wyoming State Clearing House
2320 Capitol Avenue
Cheyenne, WY 82002

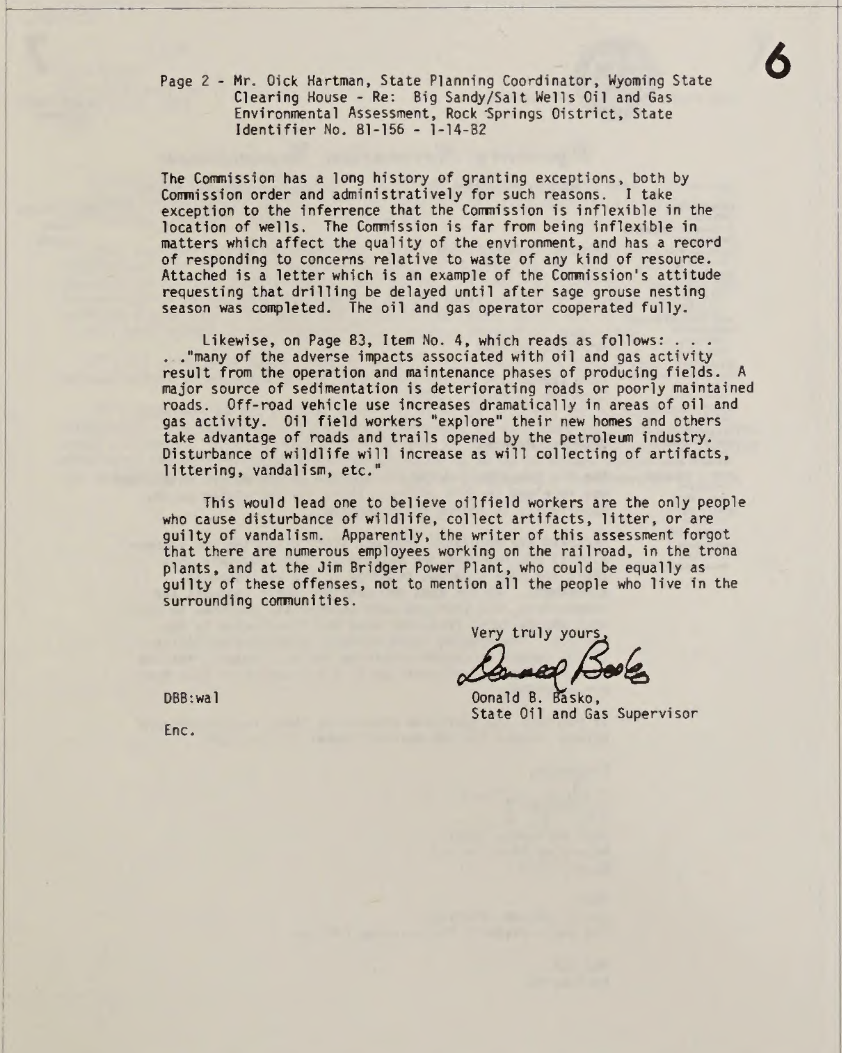
Re: Big Sandy/Salt Wells Oil and Gas Environmental Assessment, Rock Springs District, State Identifier No. 81-156

Dear Mr. Hartman:

I would like to take the opportunity to comment on the Big Sandy/Salt Wells environmental assessment.

On Page B3, there is a summary of future impacts due to oil and gas development in the study area. Item No. 3 makes the remark that . . ."much of the process of oil and gas development is outside the control and influence of BLM. State and other federal agencies have both regulatory and supervisory functions. Some of these functions may take precedence over environmental concerns. An example of this is in the area of well site location. In many cases, the Wyoming Oil and Gas Commission requires that wells be located within certain portions of a section. Even when such spacing requirements are not in effect, operators may wish to space exploratory wells in accordance with these patterns in order to be able to drill a maximum number of wells, should the area eventually fall under spacing orders. This real or imagined inflexibility can limit the opportunity to locate drill sites in the most environmentally acceptable locations."

This statement is grossly misleading and in error. Wells are located on the surface in such a manner so as to provide the maximum amount of drainage of the reservoir from the least number of wells. They are also located so as to facilitate secondary recovery projects which may require wells being converted to injection service; they are located so as to be uniformly spaced, one well to another; and frequently, they are located because of subsurface geologic conditions which dictate that location. Furthermore, the Wyoming Oil and Gas Conservation Commission will allow exceptions to the locations of wells, spacing orders, rules or regulations, should there be good and sufficient reasons to do so. Certainly environmental concerns are acceptable reasons for moving a well site location.



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Page 2 - Mr. Dick Hartman, State Planning Coordinator, Wyoming State Clearing House - Re: Big Sandy/Salt Wells Oil and Gas Environmental Assessment, Rock Springs District, State Identifier No. 81-156 - 1-14-82

The Commission has a long history of granting exceptions, both by Commission order and administratively for such reasons. I take exception to the inferrence that the Commission is inflexible in the location of wells. The Commission is far from being inflexible in matters which affect the quality of the environment, and has a record of responding to concerns relative to waste of any kind of resource. Attached is a letter which is an example of the Commission's attitude requesting that drilling be delayed until after sage grouse nesting season was completed. The oil and gas operator cooperated fully.

Likewise, on Page 83, Item No. 4, which reads as follows: . . . . ."many of the adverse impacts associated with oil and gas activity result from the operation and maintenance phases of producing fields. A major source of sedimentation is deteriorating roads or poorly maintained roads. Off-road vehicle use increases dramatically in areas of oil and gas activity. Oil field workers "explore" their new homes and others take advantage of roads and trails opened by the petroleum industry. Disturbance of wildlife will increase as will collecting of artifacts, littering, vandalism, etc."

This would lead one to believe oilfield workers are the only people who cause disturbance of wildlife, collect artifacts, litter, or are guilty of vandalism. Apparently, the writer of this assessment forgot that there are numerous employees working on the railroad, in the trona plants, and at the Jim Bridger Power Plant, who could be equally as guilty of these offenses, not to mention all the people who live in the surrounding communities.

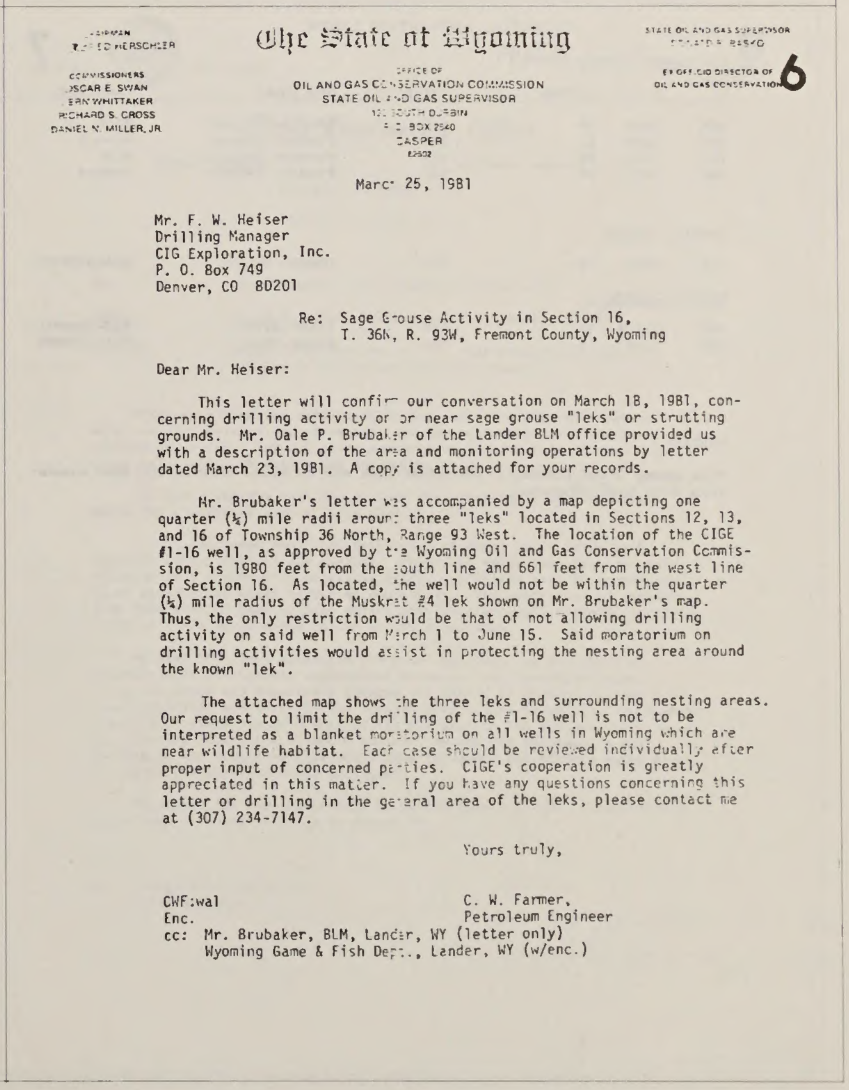
Very truly yours,

Donald Basko

Donald B. Basko,
State Oil and Gas Supervisor

DBB:wal

Enc.



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The State of Wyoming

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STATE OIL AND GAS SUPERVISOR
DONALD B. BASKO

EX OFFICIO DIRECTOR OF
OIL AND GAS CONSERVATION

March 25, 1981

Mr. F. W. Heiser
Drilling Manager
CIG Exploration, Inc.
P. O. Box 749
Denver, CO 8D201

Re: Sage Grouse Activity in Section 16,
T. 36N, R. 93W, Fremont County, Wyoming

Dear Mr. Heiser:

This letter will confirm our conversation on March 18, 1981, concerning drilling activity on or near sage grouse "leks" or strutting grounds. Mr. Dale P. Brubaker of the Lander BLM office provided us with a description of the area and monitoring operations by letter dated March 23, 1981. A copy is attached for your records.

Mr. Brubaker's letter was accompanied by a map depicting one quarter (¼) mile radii around three "leks" located in Sections 12, 13, and 16 of Township 36 North, Range 93 West. The location of the CIGE #1-16 well, as approved by the Wyoming Oil and Gas Conservation Commission, is 1980 feet from the south line and 661 feet from the west line of Section 16. As located, the well would not be within the quarter (¼) mile radius of the Muskrat #4 lek shown on Mr. Brubaker's map. Thus, the only restriction would be that of not allowing drilling activity on said well from March 1 to June 15. Said moratorium on drilling activities would assist in protecting the nesting area around the known "lek".

The attached map shows the three leks and surrounding nesting areas. Our request to limit the drilling of the #1-16 well is not to be interpreted as a blanket moratorium on all wells in Wyoming which are near wildlife habitat. Each case should be reviewed individually after proper input of concerned parties. CIGE's cooperation is greatly appreciated in this matter. If you have any questions concerning this letter or drilling in the general area of the leks, please contact me at (307) 234-7147.

Yours truly,

C. W. Farmer,
Petroleum Engineer

CWF:wal
Enc.
cc: Mr. Brubaker, BLM, Lander, WY (letter only)
Wyoming Game & Fish Dept., Lander, WY (w/enc.)

7

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

604 EAST 25TH STREET CHEYENNE, WYOMING 82002

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Director
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1017 Victoria
Sheridan 82801

January 13, 1982

Mr. Dick Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

RE: A95 #81-156

Dear Mr. Hartman:

The draft regional environmental assessment on oil and gas development in the Big Sandy and Salt Wells resource areas was received in this office January 11, 1982. Thank you for giving us the opportunity to review the statement.

The major concern of the Wyoming Recreation Commission (WRC) would be the possible impacts on the existing and potential recreation lands in this area. The importance of oil and gas production in Wyoming is acknowledged but, consideration of the long term benefits tourism and recreation provide for the state must be noted. The recreation/tourism industry ranks second only to minerals as an economic force in Wyoming. Consequently, it seems appropriate that any damage to recreation resources from the relatively short term gains of the oil and gas industry should be avoided.

The WRC recommends that strict protective measures be established and enforced for all recreation areas (existing and potential) and for the eight Areas of Critical Environmental Concern (ACEC) listed on page 20 of the report. An inventory of potential recreation lands conducted in this region has identified a number of areas with high recreation value. A listing of these sites is included for your review.

If you have any questions concerning this recommendation, please contact this office.

Sincerely,

Alvin F. Bastron

Alvin F. Bastron, P.E.
Chief, State Parks

Encls.

7

POTENTIAL RECREATION LANDS

Sweetwater County

T	R	Section	Acres	Site Name	Ownership
23N	102W	16	@640	Steamboat Mountain	State
23N	102W	9	640	Steamboat Mountain	BLM
23N	102W	10	640	Steamboat Mountain	BLM
18N	107W	6	640	Green River	Private
19N	108W	36	550	Green River	State/Private
19N	108W	25	640	Green River	Private
19N	108W	23	640	Green River	Private
19N	108W	22	640	Green River	State
19N	108W	15	640	Green River	Private
19N	108W	9	640	Green River	Private
19N	108W	5	640	Green River	Private
19N	108W	6	640	Green River	BLM
20N	108W	30	640	Green River	BLM
20N	108W	31	640	Green River	Private
20N	109W	26	640	Green River	BLM
20N	109W	23	640	Green River	Private
20N	109W	22	460	Green River	BLM
20N	109W	15	640	Green River	Private
20N	109W	16	640	Green River	State
20N	109W	9	640	Green River	Private
20N	109W	5	600	Green River	Private
20N	109W	4	600	Green River	State
21N	109W	36	640	Green River	State
21N	109W	35	640	Green River	Private
21N	109W	26	640	Green River	Private/BLM
21N	109W	5	640	Green River	Private
22N	109W	32	640	Green River	BLM/Private
22N	109W	29	640	Green River	Private
22N	109W	20	640	Green River	Fish and Wildlife Service/Private
22N	109W	28	640	Green River	Fish and Wildlife Service/BLM
22N	109W	18	640	Green River	Fish & Wildlife Service/BLM/Private
22N	110W	2	640	Green River	Fish & Wildlife Service
23N	111W	23	640	Green River	Fish & Wildlife Service
23N	111W	14	640	Green River	Fish & Wildlife Service/BLM
23N	111W	16	640	Green River	State/Fish and Wildlife Service
26N	101W	3	640	Oregon Buttes	BLM
26N	100W	10	640	Oregon Buttes	BLM
26N	101W	4	640	Oregon Buttes	BLM
26N	101W	2	640	Oregon Buttes	BLM
17N	106W	27	640	Little Firehole Canyon	Private
17N	106 W	28	640	Little Firehole Canyon	BLM
17N	106W	34	640	Little Firehole Canyon	BLM
17N	106W	29	640	Little Firehole Canyon	Private

7

POTENTIAL RECREATION LANDS

Sweetwater County (Cont.)

T	R	Section	Acres	Site Name	Ownership
16N	106W	28	640	Firehole Canyon	BLM
16N	106W	21	640	Firehole Canyon	Private
16N	106W	20	640	Firehole Canyon	BLM
16N	106W	19	640	Firehole Canyon	Private

Fremont County

T	R	Section	Acres	Site Name	Ownership
27N	101W	34	640	Oregon Buttes	BLM/Private

Lincoln County

T	R	Section	Acres	Site Name	Ownership
26N	112 W	8	640	Green River	BLM/Private
26N	112W	5	640	Green River	BLM/Private

NOTE**

This listing is not complete. Additional sites will be added after on-site field evaluations have been conducted.

81-156

7

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

604 EAST 25TH STREET CHEYENNE, WYOMING 82002

JAN L. WILSON
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DAN MADIA
1017 Victoria
Sheridan 82801

January 14, 1982

Mr. Dick Hartman
SPC
2320 Capitol
Cheyenne, Wyoming 82002

Dear Mr. Hartman:

The Big Sandy/Salt Wells Oil and Gas Environmental Assessment was received in this office. Thank you for giving us the opportunity to review the assessment.

Enclosed are memoranda from our staff historian and archaeologist who reviewed the materials. They indicate that there are some problems relating to the environmental assessment. We ask that you consider their comments and suggestions, and that you take appropriate measures to protect any cultural resources that may be affected by the project. The Wyoming State Historic Preservation Officer (SHPO) cannot recommend clearance for the project, for the sake of cultural resources, until the concerns of this memo are addressed.

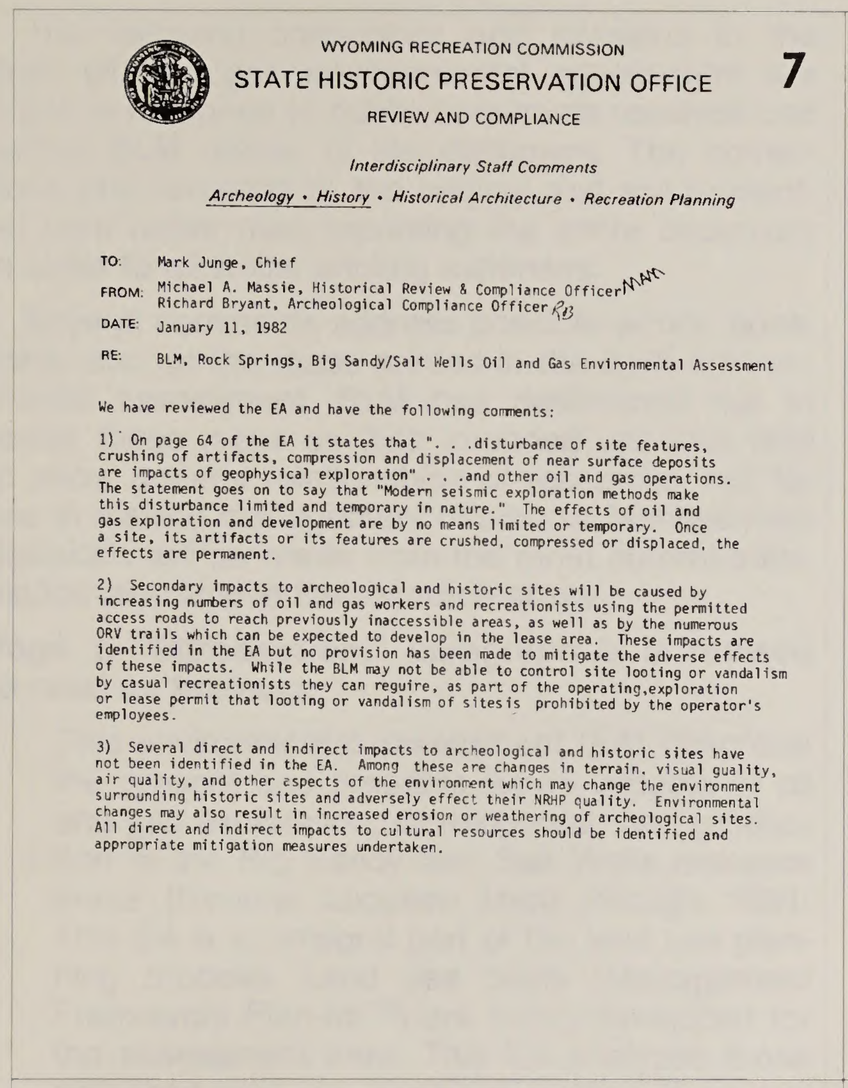
If you have any questions concerning these recommendations please contact the appropriate member of our staff.

Sincerely,

Mark G. Junge, Chief
Resources Division and
Deputy SHPO

FOR:
Jan L. Wilson, Director
and State Historic Preservation Officer

MGJ:tjh
Enclosures



WYOMING RECREATION COMMISSION
STATE HISTORIC PRESERVATION OFFICE
REVIEW AND COMPLIANCE

7

Interdisciplinary Staff Comments

Archeology • History • Historical Architecture • Recreation Planning

TO: Mark Junge, Chief

FROM: Michael A. Massie, Historical Review & Compliance Officer MAM
Richard Bryant, Archeological Compliance Officer RB

DATE: January 11, 1982

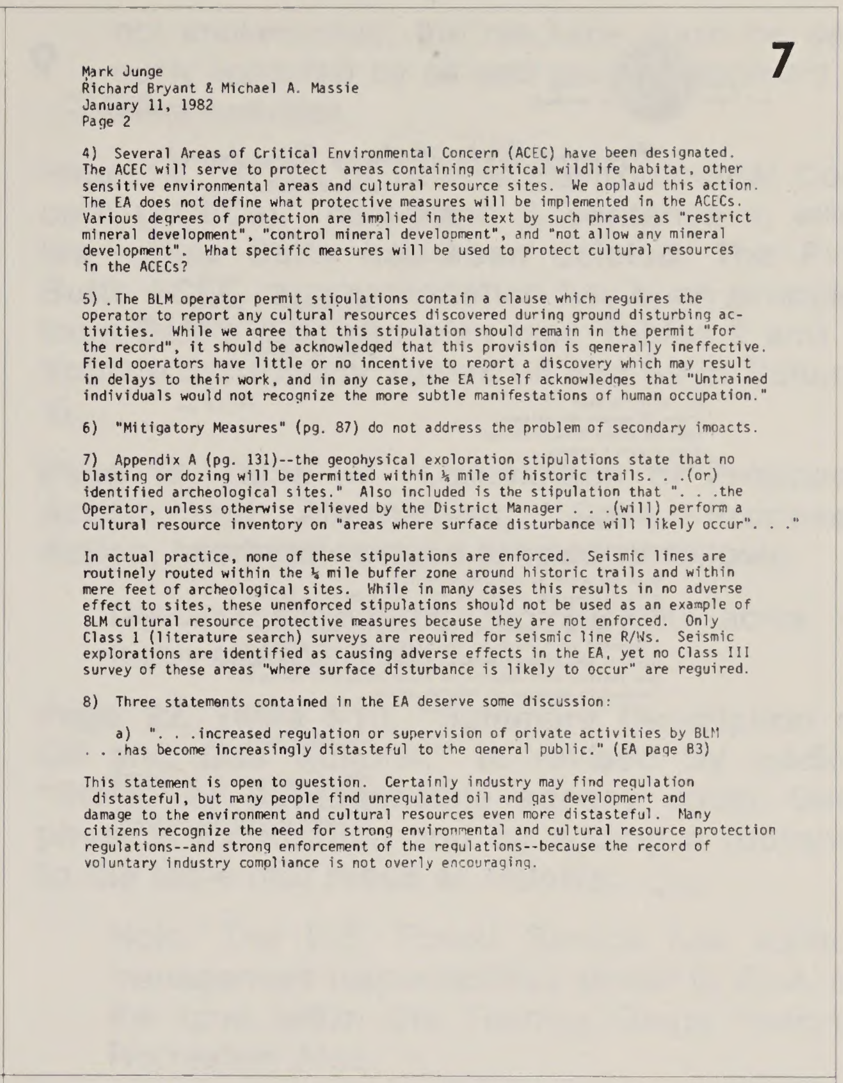
RE: BLM, Rock Springs, Big Sandy/Salt Wells Oil and Gas Environmental Assessment

We have reviewed the EA and have the following comments:

1) On page 64 of the EA it states that ". . .disturbance of site features, crushing of artifacts, compression and displacement of near surface deposits are impacts of geophysical exploration" . . .and other oil and gas operations. The statement goes on to say that "Modern seismic exploration methods make this disturbance limited and temporary in nature." The effects of oil and gas exploration and development are by no means limited or temporary. Once a site, its artifacts or its features are crushed, compressed or displaced, the effects are permanent.

2) Secondary impacts to archeological and historic sites will be caused by increasing numbers of oil and gas workers and recreationists using the permitted access roads to reach previously inaccessible areas, as well as by the numerous ORV trails which can be expected to develop in the lease area. These impacts are identified in the EA but no provision has been made to mitigate the adverse effects of these impacts. While the BLM may not be able to control site looting or vandalism by casual recreationists they can require, as part of the operating,exploration or lease permit that looting or vandalism of sites is prohibited by the operator's employees.

3) Several direct and indirect impacts to archeological and historic sites have not been identified in the EA. Among these are changes in terrain, visual quality, air quality, and other aspects of the environment which may change the environment surrounding historic sites and adversely effect their NRHP quality. Environmental changes may also result in increased erosion or weathering of archeological sites. All direct and indirect impacts to cultural resources should be identified and appropriate mitigation measures undertaken.



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Mark Junge
Richard Bryant & Michael A. Massie
January 11, 1982
Page 2

4) Several Areas of Critical Environmental Concern (ACEC) have been designated. The ACEC will serve to protect areas containing critical wildlife habitat, other sensitive environmental areas and cultural resource sites. We applaud this action. The EA does not define what protective measures will be implemented in the ACECs. Various degrees of protection are implied in the text by such phrases as "restrict mineral development", "control mineral development", and "not allow any mineral development". What specific measures will be used to protect cultural resources in the ACECs?

5) .The BLM operator permit stipulations contain a clause which requires the operator to report any cultural resources discovered during ground disturbing activities. While we agree that this stipulation should remain in the permit "for the record", it should be acknowledged that this provision is generally ineffective. Field operators have little or no incentive to report a discovery which may result in delays to their work, and in any case, the EA itself acknowledges that "Untrained individuals would not recognize the more subtle manifestations of human occupation."

6) "Mitigatory Measures" (pg. 87) do not address the problem of secondary impacts.

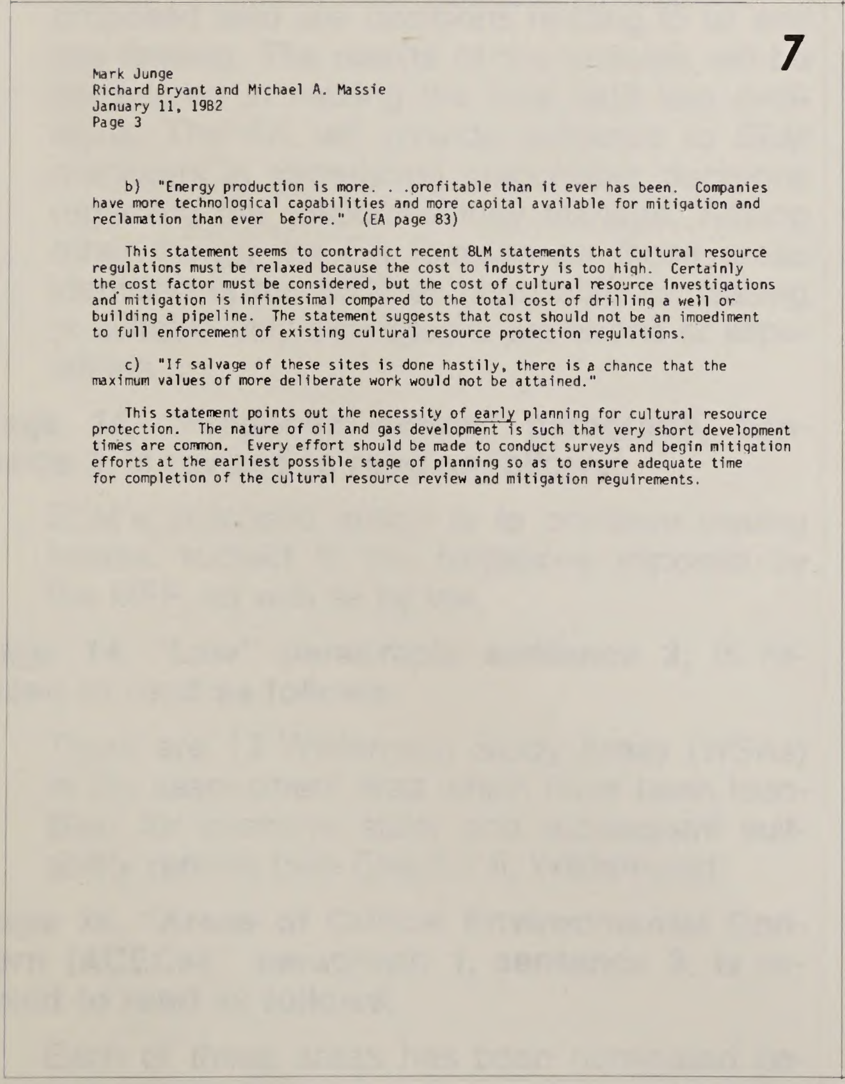
7) Appendix A (pg. 131)--the geophysical exploration stipulations state that no blasting or dozing will be permitted within ¼ mile of historic trails. . .(or) identified archeological sites." Also included is the stipulation that ". . .the Operator, unless otherwise relieved by the District Manager . . .(will) perform a cultural resource inventory on "areas where surface disturbance will likely occur". . ."

In actual practice, none of these stipulations are enforced. Seismic lines are routinely routed within the ¼ mile buffer zone around historic trails and within mere feet of archeological sites. While in many cases this results in no adverse effect to sites, these unenforced stipulations should not be used as an example of BLM cultural resource protective measures because they are not enforced. Only Class 1 (literature search) surveys are required for seismic line R/Ws. Seismic explorations are identified as causing adverse effects in the EA, yet no Class III survey of these areas "where surface disturbance is likely to occur" are required.

8) Three statements contained in the EA deserve some discussion:

a) ". . .increased regulation or supervision of private activities by BLM . . .has become increasingly distasteful to the general public." (EA page 83)

This statement is open to question. Certainly industry may find regulation distasteful, but many people find unregulated oil and gas development and damage to the environment and cultural resources even more distasteful. Many citizens recognize the need for strong environmental and cultural resource protection regulations--and strong enforcement of the regulations--because the record of voluntary industry compliance is not overly encouraging.



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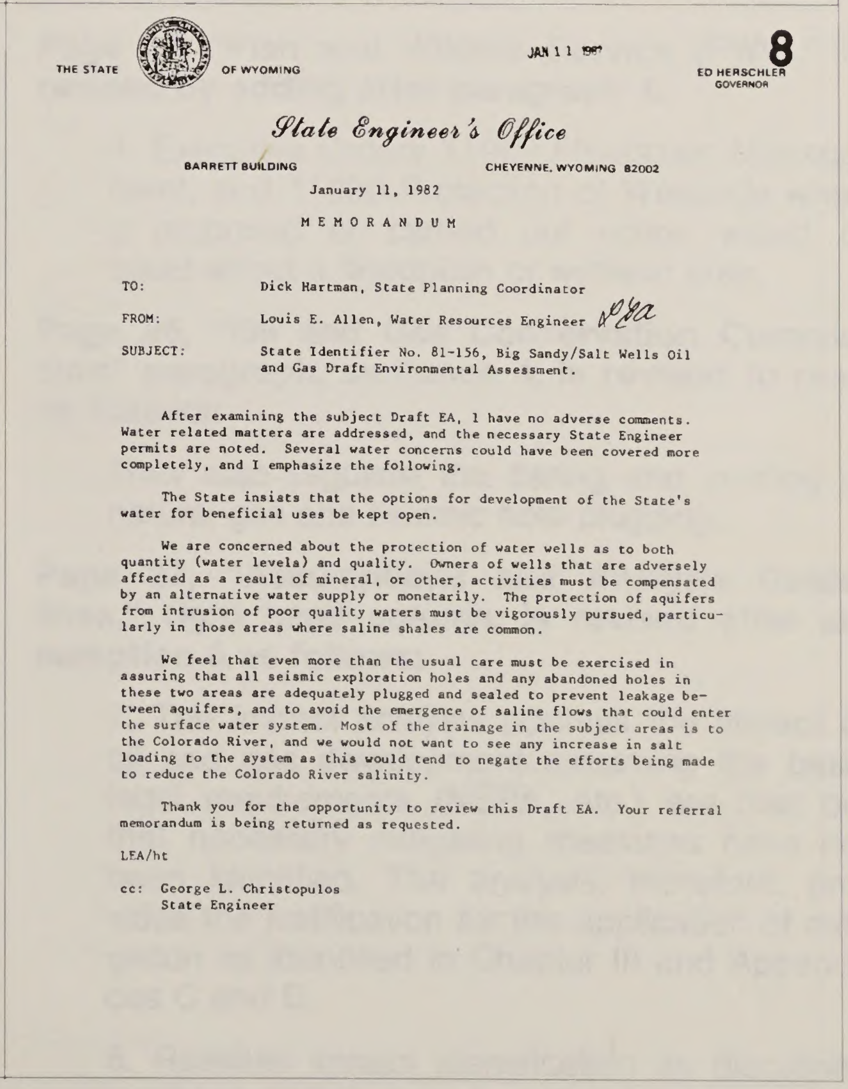
Mark Junge
Richard Bryant and Michael A. Massie
January 11, 1982
Page 3

b) "Energy production is more. . .profitable than it ever has been. Companies have more technological capabilities and more capital available for mitigation and reclamation than ever before." (EA page 83)

This statement seems to contradict recent BLM statements that cultural resource regulations must be relaxed because the cost to industry is too high. Certainly the cost factor must be considered, but the cost of cultural resource investigations and mitigation is infintesimal compared to the total cost of drilling a well or building a pipeline. The statement suggests that cost should not be an impediment to full enforcement of existing cultural resource protection regulations.

c) "If salvage of these sites is done hastily, there is a chance that the maximum values of more deliberate work would not be attained."

This statement points out the necessity of early planning for cultural resource protection. The nature of oil and gas development is such that very short development times are common. Every effort should be made to conduct surveys and begin mitigation efforts at the earliest possible stage of planning so as to ensure adequate time for completion of the cultural resource review and mitigation requirements.



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

State Engineer's Office

BARRETT BUILDING CHEYENNE, WYOMING 82002

JAN 11 1982

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January 11, 1982

MEMORANDUM

TO: Dick Hartman, State Planning Coordinator

FROM: Louis E. Allen, Water Resources Engineer LEA

SUBJECT: State Identifier No. 81-156, Big Sandy/Salt Wells Oil and Gas Draft Environmental Assessment.

After examining the subject Draft EA, I have no adverse comments. Water related matters are addressed, and the necessary State Engineer permits are noted. Several water concerns could have been covered more completely, and I emphasize the following.

The State insists that the options for development of the State's water for beneficial uses be kept open.

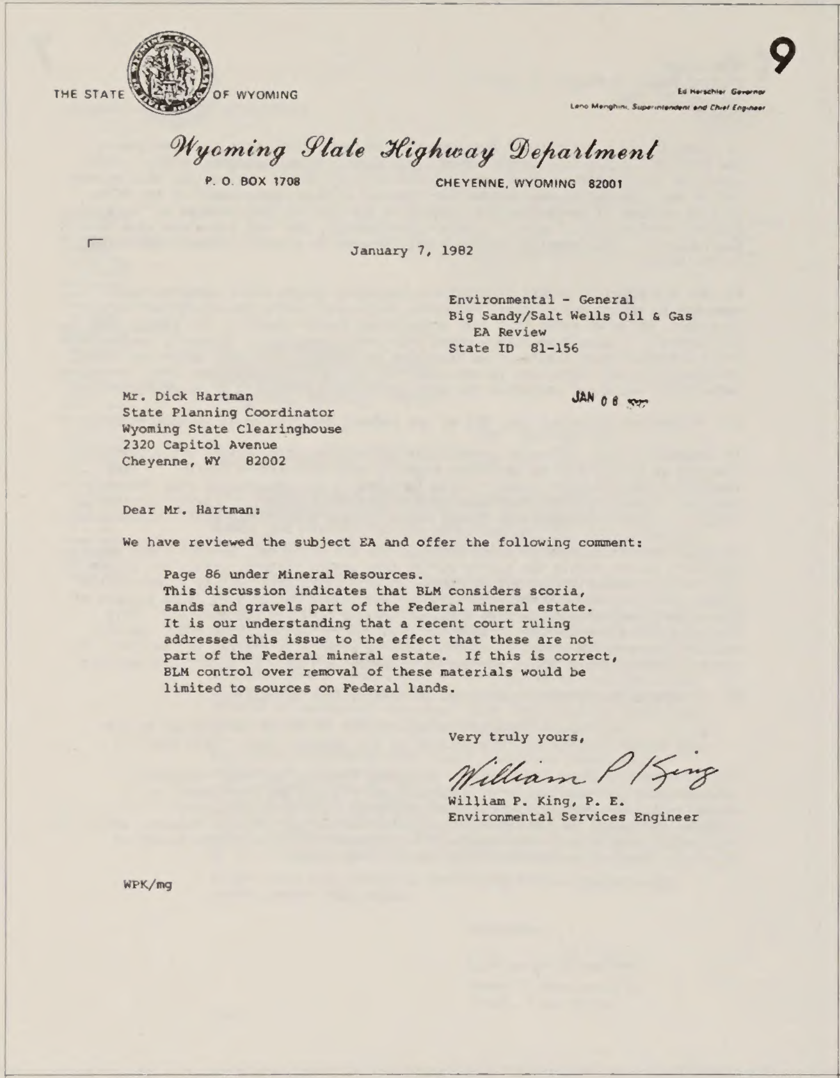
We are concerned about the protection of water wells as to both quantity (water levels) and quality. Owners of wells that are adversely affected as a result of mineral, or other, activities must be compensated by an alternative water supply or monetarily. The protection of aquifers from intrusion of poor quality waters must be vigorously pursued, particularly in those areas where saline shales are common.

We feel that even more than the usual care must be exercised in assuring that all seismic exploration holes and any abandoned holes in these two areas are adequately plugged and sealed to prevent leakage between aquifers, and to avoid the emergence of saline flows that could enter the surface water system. Most of the drainage in the subject areas is to the Colorado River, and we would not want to see any increase in salt loading to the system as this would tend to negate the efforts being made to reduce the Colorado River salinity.

Thank you for the opportunity to review this Draft EA. Your referral memorandum is being returned as requested.

LEA/ht

cc: George L. Christopulos
State Engineer



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THE STATE OF WYOMING

Ed Herschler Governor
Leno Menghini, Superintendent and Chief Engineer

Wyoming State Highway Department

P. O. BOX 1708 CHEYENNE, WYOMING 82001

January 7, 1982

Environmental - General
Big Sandy/Salt Wells Oil & Gas
EA Review
State ID 81-156

JAN 08

Mr. Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

Dear Mr. Hartman:

We have reviewed the subject EA and offer the following comment:

> Page 86 under Mineral Resources.
> This discussion indicates that BLM considers scoria, sands and gravels part of the Federal mineral estate. It is our understanding that a recent court ruling addressed this issue to the effect that these are not part of the Federal mineral estate. If this is correct, BLM control over removal of these materials would be limited to sources on Federal lands.

Very truly yours,

William P King

William P. King, P. E.
Environmental Services Engineer

WPK/mg

CORRECTIONS AND REVISIONS

The following corrections and revisions to the draft oil and gas environmental assessment are made in response to public comments received and further BLM review of the document. The corrections and revisions to the original text are presented here rather than reprinting the entire document in order to minimize printing expenses.

Several comments address possible errors, questions, etc. on the maps printed in the draft environmental assessment. BLM has determined not to revise these maps as their intended use was only to show general relationships of resources, not for use in making management decisions. Management decisions will be made from the most current information available in the resource areas.

Page 1, "Introduction," paragraph 3, is revised to read as follows:

> This environmental assessment (EA) describes the present and probable future impacts of oil and gas exploration, development, and production in the Big Sandy and Salt Wells resource areas (General Location Map) through 1991. This EA is an integral part of the land use planning process. Land use plans (Management Framework Plan-MFP) are being developed for the assessment area. This EA analyzes those proposed land use decisions relating to oil and gas leasing. The results of the analysis will be considered in making the final land use decisions. The EA will provide guidance to BLM managers in formulating responsible decisions regarding the resources they manage. Among other things, the EA focuses on those areas identified in the MFP as unsuitable for leasing or suitable only with special provisions or stipulations.

Page 14, "Proposed Action" paragraph, sentence 3, is revised to read as follows:

> BLM's proposed action is to continue issuing leases, subject to the limitations imposed by the MFP, as well as by law.

Page 14, "Law" paragraph, sentence 3, is revised to read as follows:

> There are 13 Wilderness Study Areas (WSAs) in the assessment area which have been identified for intensive study and subsequent suitability reports (see Chapter II, Wilderness).

Page 14, "Areas of Critical Environmental Concern (ACECs)," paragraph 1, sentence 3, is revised to read as follows:

> Each of these areas has been nominated because each functions as a crucial element of a particular resource; if special management is not implemented, the resource could be seriously impacted by oil and gas development or other activities.

Page 14, "Areas of Critical Environmental Concern (ACECs)," paragraph 2, sentence 1, wildlife— Pine Butte has been deleted. The Pine Butte ACEC recommendation has been dropped from BLM's land use plan (see Tables 2 and 3, Volume 2; formerly Tables I-8 and I-9 in Volume 1).

Page 15, Table I-7 "Comparison of Proposed Action and Alternatives," Soils, Proposed Action, has been revised to read as follows:

> Develop stipulations for 798,090 acres of highly erodible soils.

Page 22, Table I-10, "Summary Description of Oil and Gas Actions," is revised by adding "State" as a responsible agency under Geophysical Exploration and by adding a footnote to the table that reads as follows:

> Note: The U.S. Forest Service has surface management responsibilities similar to BLM, on the land within the Flaming Gorge National Recreation Area.

Page 24, "Fish and Wildlife Service (FWS)," is revised by adding after paragraph 4:

> 4. Executive Orders 11988 Floodplain Management, and 11990 Protection of Wetlands when a proposed or carried out action would or could affect a floodplain or wetland area.

Page 25, "Oil and Gas Conservation Commission" paragraph, sentence 4, is revised to read as follows:

> They also regulate the flaring and venting of natural gas and seismic hole plugging.

Page 27, "Assumptions and Analysis Guidelines," right hand column, is revised after assumption 6 as follows:

> 7. The impact analysis portrays the impact of oil and gas development assuming the basic legal requirements (NEPA, etc.) are met but that necessary mitigating measures have not been identified. The analysis, therefore, provides the justification for the application of mitigation as identified in Chapter III and Appendices C and D.
>
> 8. Residual impact identification as discussed in Chapter III, is based on the following premises:

A. BLM specialists will identify all potential conflicts.

B. BLM specialists will recommend necessary stipulations to mitigate impacts.

C. Geological Survey and operators will accept all recommended stipulations.

D. Operators will adequately and completely convey stipulations to their contractors and employees, and ensure compliance.

E. Violations will be quickly detected and immediately corrected.

9. It is assumed that the beneficial and adverse impacts discussed could occur on private or state land as well as public lands. Mitigating measures may be identified to the state or private landowners, but no mandatory requirements can be made by BLM.

Page 32, "Coal" paragraph, sentences 4 and 5, are revised to read as follows:

Total coal resources of eight billion tons of subbituminous and bituminous coal are estimated. The coal presently produced comes from formations of Paleocene Age (Fort Union Formation).

Pages 32 and 34, "Trona" paragraph, is revised after sentence 2 to read as follows:

Tenneco Oil Company recently began production of soda ash at their plant site and is expected to produce one MTPY. Three other trona mine and refinery operations; FMC Corp., Allied Chemical, and Texas Gulf, Inc.; are immediately adjacent to the assessment area.

Page 46, "Impacts," paragraph 2, is revised by adding after sentence 2:

In some cases water wells developed to supply water for oil and gas drilling may be of sufficient quality to be of beneficial use to wildlife and livestock.

Page 48, "Geophysical Exploration" paragraph, is revised by adding after sentence 3:

Increased incidence of fire may occur due to geophysical exploration methods.

Page 48, "Geophysical Exploration," paragraph 2, sentence 4, is revised to read as follows:

It may even be enhanced by additional snow accumulation, leaving linear discontinuities (edge effect) in the otherwise extensive brush lands.

Page 48, "Threatened and Endangered Plant Species" paragraph, is revised by adding after sentence 2:

An inventory completed in 1981 indicated that this species is sensitive and will be delisted as a candidate for threatened status.

Page 49, "Impacts," paragraph 1, sentence 4, is revised to read as follows:

Examples of these are elk, raptors, some game birds, and fishes.

Page 51, "Rehabilitation" paragraph, is revised by adding after the last sentence:

Although, in crucial winter range, this decrease in shrub density would not be beneficial.

Page 51, "Pine Butte ACEC" paragraph is deleted.

Pages 51-52, "Threatened and Endangered Species," paragraph 2, after sentence 8, is revised by adding:

If any impacts would occur to bald eagles a "may affect" situation would exist and formal consultation with the Fish and Wildlife Service would be initiated.

Page 58, "Wilderness," paragraph 2, sentence 1, is revised to read as follows:

There are presently 13 areas within the assessment area which have been inventoried by BLM and designated as Wilderness Study Areas (WSAs) (see Maps II-7A and II-7B).

Pages 58 and 64 "Wilderness," paragraph 4, sentences 4 and 5, are deleted and replaced with:

Although degradation of the natural resources is not permitted, wilderness values could suffer in the short term. Upon completion of oil and gas development, there would be an opportunity for the long term return of the wilderness values for which the WSA was nominated.

Page 64, "Impacts," paragraph 2, sentence 4, is revised to read:

Modern seismic exploration methods make this disturbance limited in nature.

Page 69 is revised by adding after paragraph 4:

Changes in terrain, visual quality, air quality, and other environmental aspects may change the environment surrounding historic sites and adversely affect their National Register quality. Environmental changes may also result in increased erosion or weathering of archeological sites.

Page 70, "Visual Resources," paragraph 1, is revised by adding after the last sentence:

(VRM classification in the assessment area has been completed and management decisions would be based on the updated information which is available for review in the Big Sandy and Salt Wells Resource Area Office.)

Page 82, "Soils" paragraph, sentence 1, is revised to read as follows:

Alternative 2 would result in higher levels of erosion on 798,090 acres of highly erodible soils.

Page 83, "Summary," paragraph 4, is revised by adding after sentence 7:

However, the Wyoming Oil and Gas Conservation Commission will allow exceptions to the locations of wells, spacing orders, and rules and regulations if there is sufficient justification to do so. The commission considers environmental concerns to be acceptable justification for moving a well site location.

Page 83, "Summary," paragraph 5, sentence 4, is revised to read as follows:

Oil field workers "explore" their new homes, and other people in the surrounding communities take advantage of roads and trails opened by the petroleum industry.

Page 85, "Areas of Critical Environmental Concern (ACECs)" paragraph, is revised to read as follows:

Seven ACECs have been identified which if established, would constrain oil and gas activities. Stipulations for oil and gas development will be addressed in the activity plans developed for each ACEC.

Page 87, "Vegetation" paragraph, is revised to read as follows:

Impacts to vegetation include: tree mortality, vegetative loss due to surface disturbance, vegetative loss due to increased fire occurrence, undesirable changes in the plant community, and smothering of vegetation by dust....

Page 87, "Cultural Resources" paragraph, sentence 2, is revised by adding:

and (4) require that operators prohibit their employees from looting or vandalizing sites.

Pages 90-91, "Relationship Between Short-Term Uses and Long Term Productivity," paragraph 9, sentence 6, is revised to read:

Seeding locations in shrubby areas may increase the amount of "edge" habitat for wildlife, although, in crucial winter range this decrease in shrub density would not be beneficial.

Page 97, "Geology" paragraph, is revised as follows:

Oil and gas fields in the area are of three types: anticlinal (convex upward) fold, stratigraphic trap (Figure A-1), and a combination of the anticlinal fold and stratigraphic trap (Table Rock Field). The most important hydrocarbon-bearing formations in the assessment area are sandstones, particularly the Frontier Formation (Cretaceous), the Mesaverde Group (Cretaceous), and the Weber Formation (Pennsylvanian).

Page 110, "Field Development," paragraph 2, after sentence 5, is revised to read as follows:

The minimum spacing for gas production on federal leases is 160 acres. Spacing for gas wells is usually from 320 to 640 acres per well.

Page 139, "Site-specific Rehabilitation Plan," number 4, is revised to read as follows:

Where possible, an annual cereal crop should be sown in early spring; this stand would be seeded with native species during the following fall or spring....

Page 139, "Site-specific Rehabilitation Plan," number 8, is revised by adding:

Generally, seeds should not be covered with more than one-half inch of soil.

Page 140, last paragraph, sentence 6, is revised to read as follows:

On sites where the seed is to be drilled, a total of 12 to 15 pounds of pure live seed should be used.

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(June 1984)

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Final environmental
assessment of oil a

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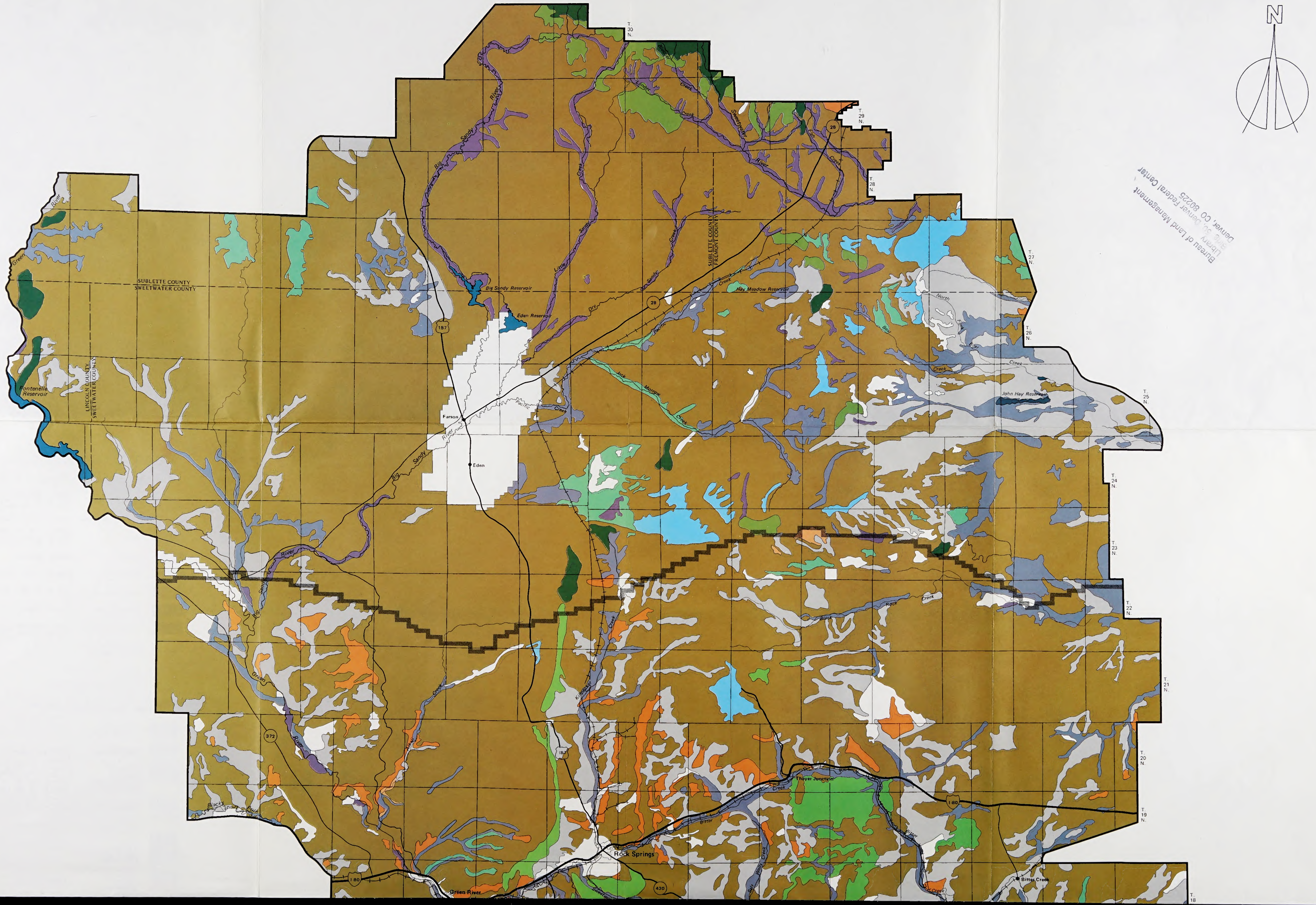
USDI — BLM

Data Source (North of screened line): ▨
Sandy Grazing Environmental Impact Statement

	VEGETATION	REHABILITATION ZONE
🟧	Sagebrush – Grass	Zone 1: 7"-9" non-alkaline Zone 3: 10"-14" non-alkaline Zone 5: 15"-19" precipitation
⬜	Saltbush – Winterfat	Zone 2: 7"-14" alkaline
🟩	Grass	Zone1: 7"-9" non-alkaline Zone 2: 7"-14" alkaline Zone 3: 10"-14" non-alkaline
🟪	Meadow	Zone 6: Wetland
🟦	Greasewood	Zone 2: 7"-14" alkaline
🟩	Mountain Shrub	Zone 5: 15"-19" precipitation
🟦	Perennial Forbs	Zone 4: 10"-19" shallow soil
🟩	Conifer or Juniper	Zone 4: 10"-19" shallow soil Zone 5: 15"-19" precipitation
⬜	Barren/Waste Private Property	

Data Source (South of screened line): ▨
Salt Wells / Pilot Butte SVIM Inventory

	VEGETATION	REHABILITATION ZONE
🟧	Sagebrush Black Sagebrush Rabbit Brush	Zone 1: 7"-9" non-alkaline Zone 3: 10"-14" non-alkaline Zone 5: 15"-19" precipitation
⬜	Saltbush Budsage Birdsfoot Sage Woody Aster	Zone 2: 7"-14" alkaline
🟧	Shadscale Spiny Hopsage Horsebrush	Zone 2: 7"-14" alkaline
🟧	Wetlands Buffaloberry Willows Sedge Rushes	Zone 6: Wetland
🟩	Juniper Mountain Mahogony	Zone 4: 10"-19" shallow soil
🟩	Mountain Shrub	Zone 5: 15"-19" precipitation
🟩	Conifers	Zone 5: 15"-19" precipitation
🟨	Aspen	Zone 5: 15"-19" precipitation
🟩	Upland Grass	Zone1: 7"-9" non-alkaline Zone 2: 7"-14" alkaline Zone 3: 10"-14" non-alkaline
🟦	Mat Forbs	Zone 4: 10"-19" shallow soil Zone 2: 7"-14" alkaline
🟦	Greasewood	Zone 2: 7"-14" alkaline
🟪	Lowland Grass Dune Grass	Zone 2: 7"-14" alkaline Zone 3: 10"-14" non-alkaline Zone 6: Wetland
⬜	Dunes, Private Property Large body of water (Flaming Gorge, Green River) Badlands Rock	



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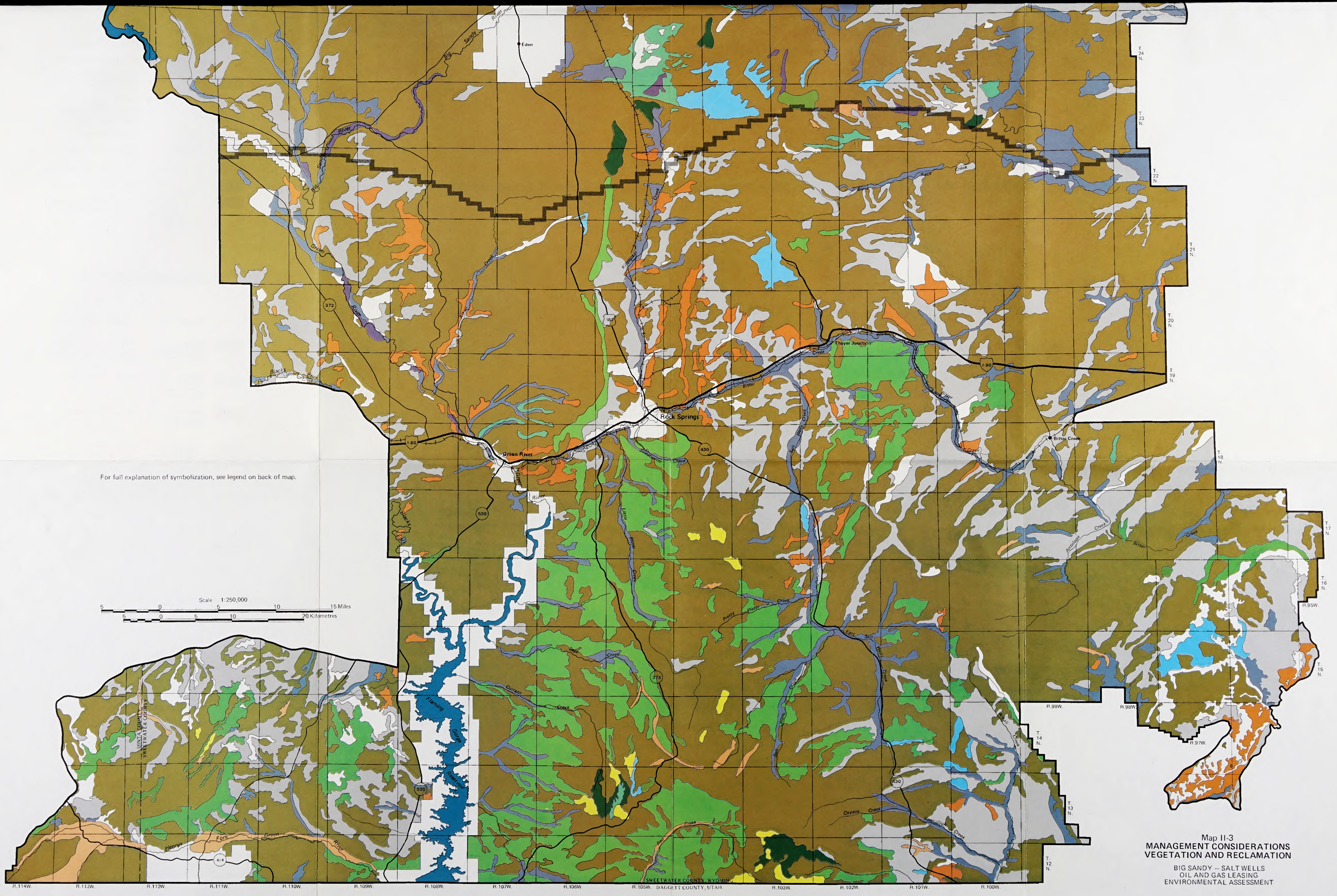
For full explanation of symbolization, see legend on back of map.



Map II-3
MANAGEMENT CONSIDERATIONS
VEGETATION AND RECLAMATION

BIG SANDY – SALT WELLS
OIL AND GAS LEASING
ENVIRONMENTAL ASSESSMENT

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